ORDER NO. ARD-8008083C

Service Manual

Cassette Deck

RS-M260

(Silver Face / Black Face)

3-Head Stereo Cassette Deck
with Peak-Hold 2-Color FL Meters
and Soft-Touch Controls

DOLBY SYSTEM

This is the Service Manual for the following areas.
D ····· For all European areas except United Kingdom.
B ····· For United Kingdom.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback
Tape speed:	4.8 cm/s
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)
Frequency response:	Metal tape; 20 – 20,000 Hz 25 – 20,000 Hz (DIN) 25 – 19,000 Hz ±3 dB 30 – 14,000 Hz ±3 dB (0 VU) CrO_2/Fe-Cr tape; 20 – 20,000 Hz 25 – 20,000 Hz (DIN) 25 – 18,000 Hz ±3 dB Normal tape; 20 – 18,000 Hz 25 – 18,000 Hz (DIN) 25 – 16,000 Hz ±3 dB
Signal-to-noise ratio:	Dolby* NR in; 67 dB (above 5 kHz) Dolby NR out; 57 dB (signal level = max. recording level, Fe-Cr/CrO_2 type tape)
Fast forward and rewind time:	Approx. 90 sceonds with C-60 cassette tape
Inputs:	MIC; sensitivity 0.25 mV, input impedance 10 kΩ applicable microphone impedance 400Ω–10 kΩ LINE; sensitivity 60 mV, input impedance 42 kΩ
Outputs:	LINE; output level 700 mV, output impedance 3.5 kΩ or less, load impedance 22 kΩ over HEADPHONE; output level 125 mV, load impedance 8/125 Ω
Rec/pb connection:	5P DIN type; input sensitivity 10 mV, input impedance 2.8 kΩ output level 700 mV, output impedance 3.5 kΩ
Bias frequency:	75 kHz
Motor:	Electrical control DC governor motor
Heads:	3-head system; 2-SX (Sendust Extra) heads for record/playback (combination type) 1-sendust/ferrite double-gap head for erasure
Power requirement:	AC; 110/125/220/240 V, 50-60 Hz
Power consumption:	16 W
Dimensions:	43.0 cm(W) × 11.9 cm(H) × 28.2 cm(D)
Weight:	5.3 kg

Specifications are subject to change without notice.
* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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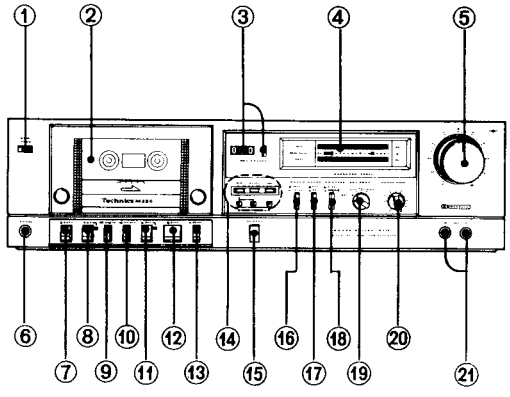
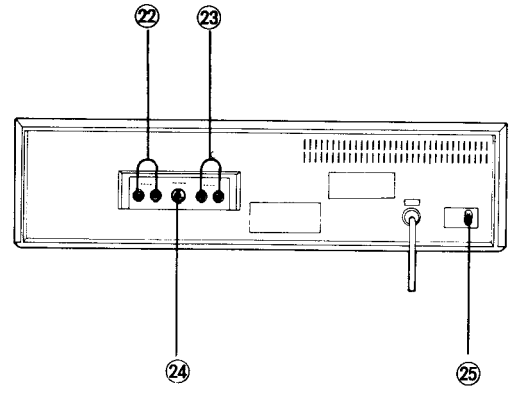
LOCATION OF CONTROLS AND COMPONENTS





① Power switch (power)
② Cassette holder
③ Tape counter and Reset button (tape counter)
④ FL (fluorescent level) meters
⑤ Input level controls (input level) (L ⊖ R)
⑥ Headphones jack (phones)
⑦ Eject button (▲ eject)
⑧ Record button (○ rec)
⑨ Rewind/Review button (◀◀ rew/rev)
⑩ Fast forward/Cue button (▶▶ ff/cue)
⑪ Play button (▶ play)
⑫ Stop button (■ stop)
⑬ Pause button (❚❚ pause)
⑭ 3 head LED display (3 Head System)
⑮ Record-muting button (rec mute)
⑯ Monitor switch (monitor)
⑰ Dolby noise-reduction switch (Dolby NR)
⑱ Input selector (input select)
⑲ Tape selector (tape select)
⑳ Output level control (output level)
㉑ Microphone jacks (L mic R)
㉒ Line output jacks (LINE OUT) (R · L)
㉓ Line input jacks (LINE IN) (R · L)
㉔ Record/Playback connection socket (REC/PB)
㉕ Voltage selector (VOLTAGE SELECTOR)

DISASSEMBLY INSTRUCTIONS

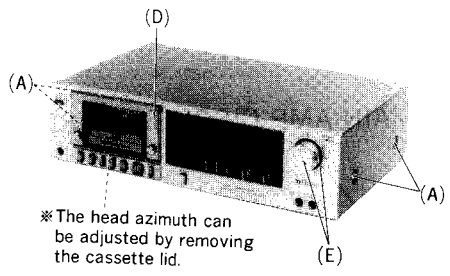


Fig. 1

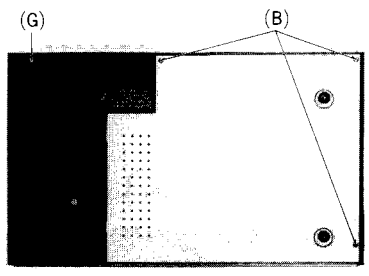


Fig. 2

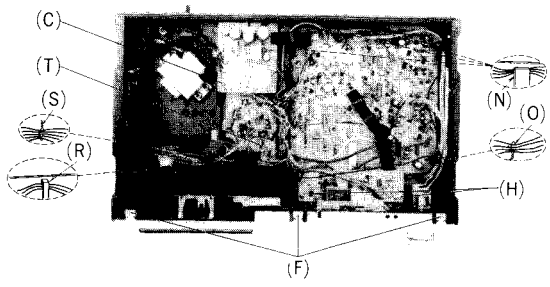


Fig. 3

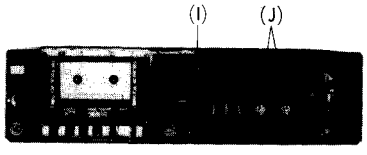


Fig. 4

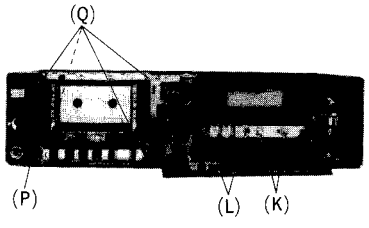


Fig. 5

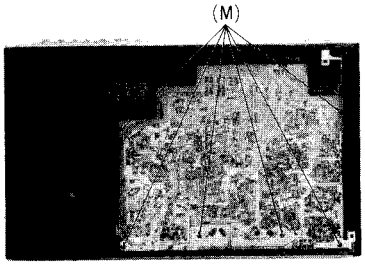


Fig. 6

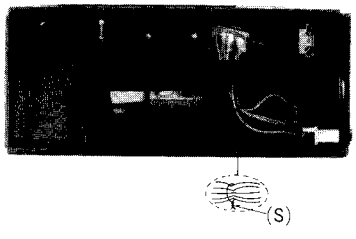


Fig. 7

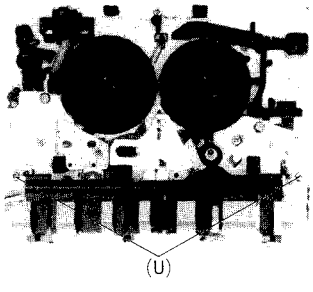
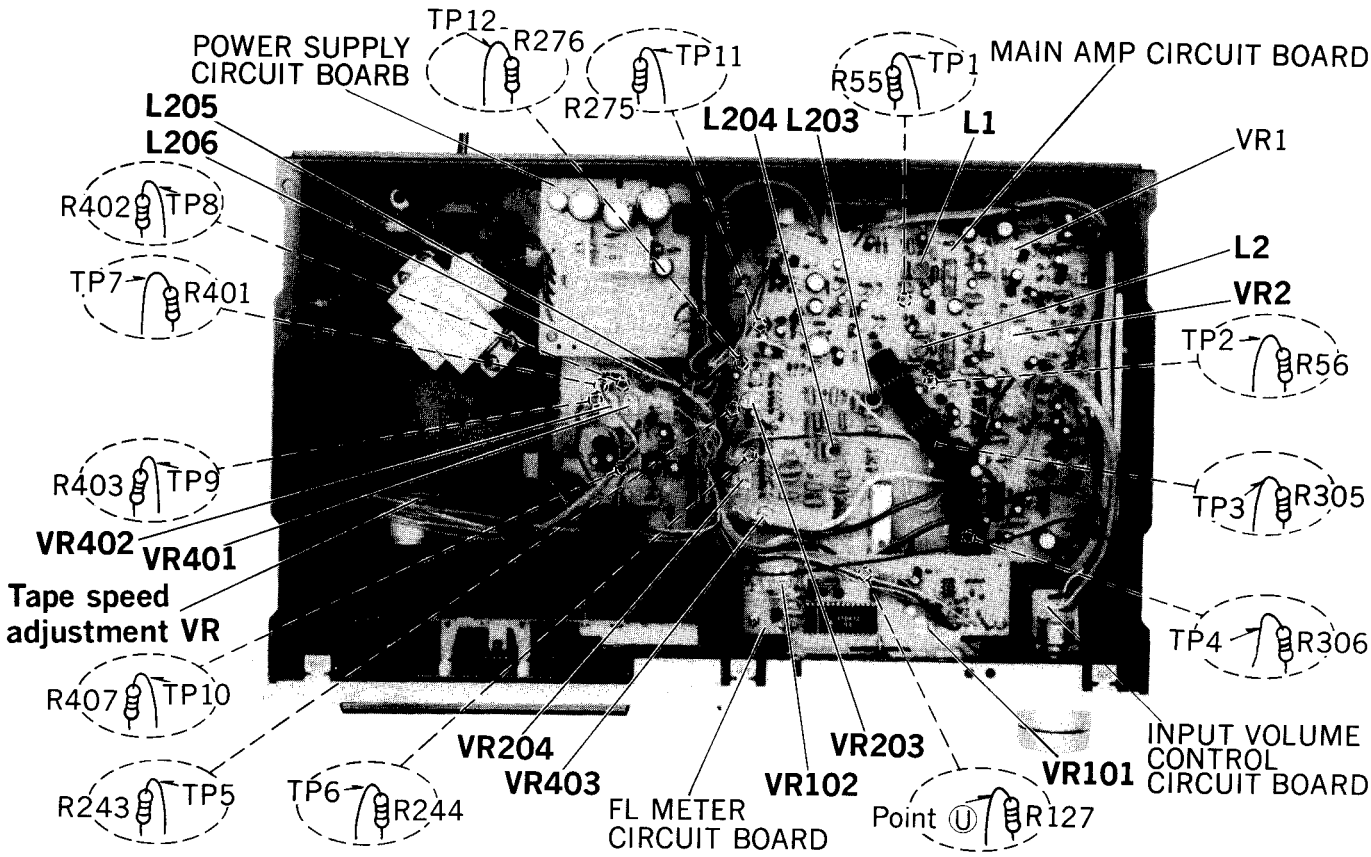


Fig. 8

Ref. No.	Procedure	To remove ——.	Remove ——.	Shown in fig. ——.
1	1	Case cover	• 4 screws ····· (A)	1
2	2	Bottom cover	• 3 screws ····· (B)	2
3	1→3	Power supply circuit board	• 1 screw····· (C)	3
4	1→2→4	Front panel	• Cassette lid ····· (D) • 2 volume knobs ····· (E) • 3 red screws····· (F) • 1 screw····· (G)	1 1 3 2
5	1→2→4→5	FL meter and FL meter circuit board	• 2 screws ····· (H)	3
6	1→2→4→6	Main circuit board	• Meter cover ····· (I) • 2 knobs ····· (J) • 2 nuts ····· (K) • 2 screws ····· (L) • 6 screws ····· (M) • 3 cord clamper ····· (N) • 1 binder ····· (O)	4 4 5 5 6 3 3
7	1→2→4→7	Mechanism unit	• Cassette holder····· (P) • 4 red screws····· (Q) • 1 cord clamper ····· (R) • 2 binders ····· (S) • 3 pin-socket E ····· (T)	5 5 3 3, 7 3
8	1→2→4→7→8	Operation button·assembly	• 2 screws ····· (U)	8

MEASUREMENT AND ADJUSTMENT METHODS

CIRCUIT BOARD AND ADJUSTMENT PARTS LOCATION



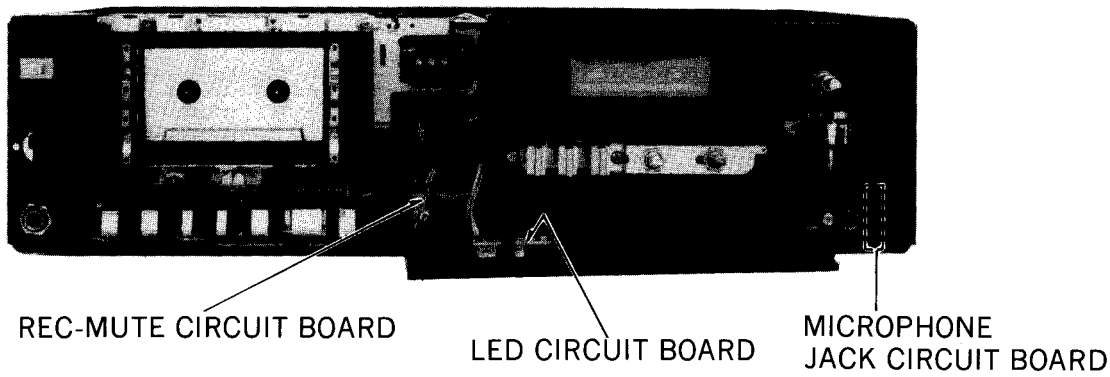
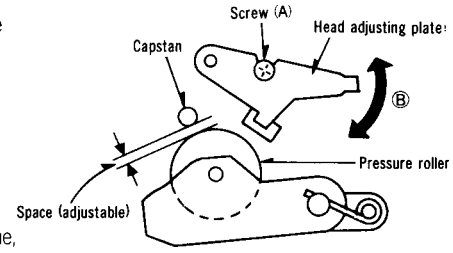
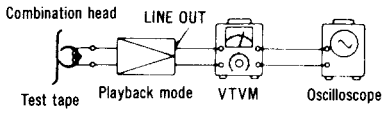
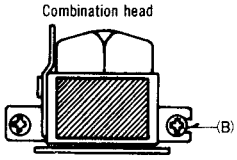
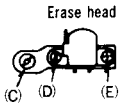
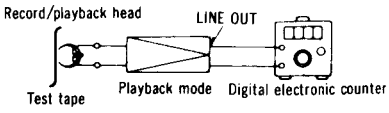


Fig. 1

NOTES: Set switches and controls in the following positions, unless specified otherwise.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: 20±5°C (68±9°F).
- Tape selector: Normal.
- Monitor selector: Tape.
- Input level controls: Maximum.
- Output level control: Maximum.
- Dolby NR selector: Out.
- Input selector: Line.

ITEM	MEASUREMENT & ADJUSTMENT
Ⓐ Head position adjustment Condition: * Playback and pause mode	(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.) 1. Press the playback button and pause button. 2. Measure the space between the pinch roller and the capstan. **Standard value: 0.5±0.3mm** 3. If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow Ⓑ for adjustment (Fig. 2).  Fig. 2
Ⓑ Head azimuth adjustment Condition: * Playback mode Equipment: * VTVM * Oscilloscope * Test tape (azimuth) ···QZZCFM * Test tape (tape path viewer) ···QZZCRD	**Combination head azimuth adjustment** 1. Test equipment connection is shown in fig. 3. 2. Playback azimuth tape (QZZCFM 8kHz). 3. Adjust record/playback head angle adjustment screw (B) in fig. 4 so that output level at LINE OUT becomes maximum. 4. Measure both channels, and adjust levels for equal output. 5. After adjustment lock head adjustment screw with lacquer.  Fig. 3  Fig. 4
Ⓒ Erase head height adjustment Condition: * Playback mode Equipment: * Test tape (tape path viewer) ···QZZCRD	**Caution:** 1. Remove screws (D) and (E) to replace the erase head. (Do not remove nut (C) since it is desighned for erase head height. Adjustment to maintain performance.) 2. After erase head replacement, check by playing test tape (QZZCRD) back to see that the tape travels properly. 3. For any tape travel performance problem, follow the procedure below for adjustment.  Fig. 5 **Adjustment** 1. Adjust nut (C) shown in fig. 5 so that the tape may not get curled or malformed by tape guide of the erase head. 2. After adjustment, lock nut (C) with lacquer.
Ⓓ Tape speed Condition: * Playback mode Equipment: * Digital electronic counter or frequency counter * Test tape···QZZCWAT	**Tape speed accuracy** 1. Test equipment connection is shown in fig. 6. 2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter. 3. Measure this frequency. 4. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3{,}000}{3{,}000} \times 100\ (\%)$ where, f = measured value 5. Take measurement at middle section of tape. **Standard value: ±1.5%**  Fig. 6 **Adjustment method** 1. Playback the test tape (middle). 2. Adjust so that frequency becomes 3,000Hz. 3. Tape speed adjustment VR shown in fig. 1. **Note:** Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

ITEM	MEASUREMENT & ADJUSTMENT

Tape speed fluctuation

Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3{,}000} \times 100\ (\%) \qquad f_1 = \text{maximum value},\ f_2 = \text{minimum value}$$

Standard value: Less than 1%

Ⓔ Playback frequency response

Condition:
- Playback mode
- Normal position
- Output level control ··· MAX

Equipment:
- VTVM
- Oscilloscope
- Test tape ··· QZZCFM

Measurement

1. Test equipment connection is shown in fig. 3.
2. Place UNIT into playback mode.
3. Playback the frequency response test tape (QZZCFM).
4. Measure output level at 315 Hz, 12.5 kHz, 8 kHz, 4 kHz, 1 kHz, 250 Hz, 125 Hz and 63 Hz and compare each output level with the standard frequency 315 Hz, at LINE OUT.
5. Make measurement for both channels.
6. Make sure that the measured value is within the range specified in the frequency response chart (Fig. 7).

Playback frequency response chart

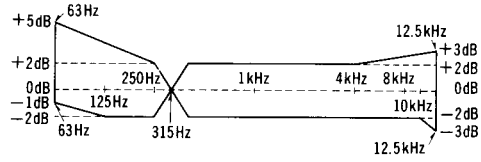


Fig. 7

Adjustment method

1. If the measured value is not within the standard at the high frequency range, P.C.B. connection points (a) (L-CH) and (a') (R-CH) should be short-circuited (Fig. 12). In this case, connection points (b) (L-CH) and (b') (R-CH) should be opened.
2. Make measurement again according to steps from (2) to (6) of the "Measurement" above.
3. If the measured value decreases at high frequency range, as shown in fig. 8, P.C.B. connection points (b) (L-CH) and (b') (R-CH) should be shorted (Fig. 12).

Compensation value

4 kHz	6 kHz	8 kHz	10 kHz	12.5 kHz
around +0.3 dB	around +0.5 dB	around +0.7 dB	around +0.7 dB	around +0.6 dB

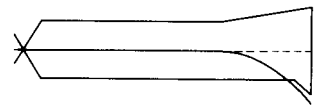


Fig. 8

4. If the measured value increases at the high frequency range, as shown in fig. 9, P.C.B. connection points (a) (L-CH) and (a') (R-CH) should be opened. Connection points (b) (L-CH) and (b') (R-CH) should be short-circuited.

Compensation value

4 kHz	6 kHz	8 kHz	10 kHz	12.5 kHz
around −0 dB	around −0.3 dB	around −0.4 dB	around −0.5 dB	around −0.7 dB

Fig. 9

5. If the measured value decreases at middle frequency range, as shown in fig. 10, P.C.B. connection points (c) (L-CH) and (c') (R-CH) should be opened (Fig. 12).

Compensation value

700 Hz	1 kHz	2 kHz	4 kHz	10 kHz
around +0.2 dB	around +0.4 dB	around +0.7 dB	around +0.7 dB	around +0.9 dB

Fig. 10

6. If the measured value increases at middle frequency range, as shown in fig. 11, P.C.B. connection points (c) (L-CH) and (c') (R-CH) should be shorted (Fig. 12).

Compensation value

700 Hz	1 kHz	2 kHz	4 kHz	10 kHz
around −0.2 dB	around −0.4 dB	around −0.7 dB	around −0.9 dB	around −0.9 dB

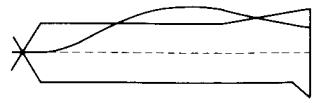


Fig. 11

ITEM	MEASUREMENT & ADJUSTMENT

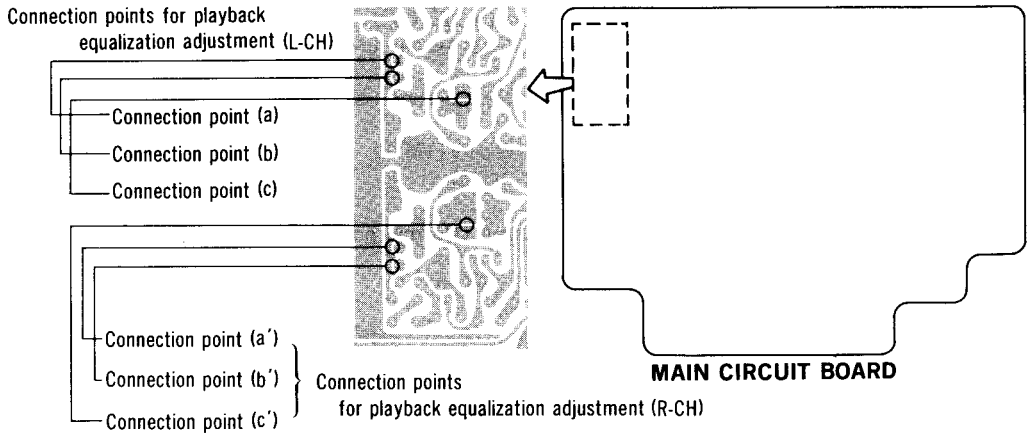


Fig. 12

Ⓕ Playback gain

Condition:
- Playback mode
- Normal position
- Output level control ··· MAX

Equipment:
- VTVM
- Oscilloscope
- Test tape ··· QZZCFM

1. Test equipment connection is shown in fig. 3.
2. Playback standard recording level portion on test tape (QZZCFM 315 Hz), and using VTVM measure the output level at LINE OUT.
3. Make measurement for both channels.

Standard value: around 0.7 V

Adjustment

1. If measured value is not standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 1).
2. After adjustment, check "Ⓔ Playback frequency response" again.

Ⓖ Bias leakage

Condition:
- Record mode
- Input level controls ··· MAX
- Output level control ··· MAX
- Tape selector ··· Metal position

Equipment:
- VTVM
- Oscilloscope

Adjustment (For record amp)

1. Test equipment connection is shown in fig. 13.
2. Place UNIT into record mode.
3. Adjust trap coils L205 (L-CH), L206 (R-CH), so that measured value becomes minimum.

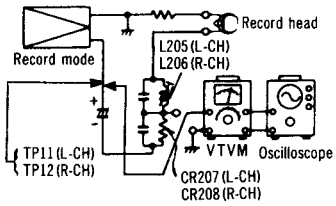


Fig. 13

Adjustment (For playback amp)

1. Test equipment connection is shown in fig. 14.
2. Turn the UNIT into record mode and set the monitor selector to tape position.
3. Adjust trap coils L1 (L-CH) and L2 (R-CH), so that measured values are minimized at LINE OUT.

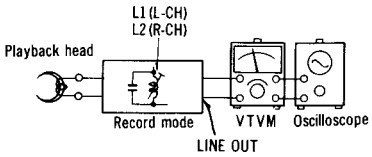


Fig. 14

Ⓗ Erase current

Condition:
- Record mode
- Tape selector ··· Metal position

Equipment:
- VTVM
- Oscilloscope

1. Test equipment connection is shown in fig. 15.
2. Place UNIT into record mode and measure voltage at test point 9.
3. Determine erase current with the following formula:

$$\text{Erase current (A)} = \frac{\text{Voltage across both ends of R403}}{1\ (\Omega)}$$

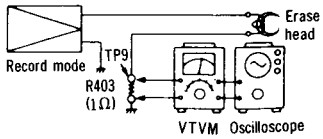


Fig. 15

Standard value: 100^{+20}_{-5} mA (Tape selector ··· Metal)

4. If measured value is not within standard, adjust VR403.

ITEM	MEASUREMENT & ADJUSTMENT

❶ Bias current

Condition:
* Record mode
* Tape selector
  - ··· Normal position
  - ··· Fe-Cr position
  - ··· CrO_2 position
  - ··· Metal position

Equipment:
* VTVM
* Oscilloscope

1. Test equipment connection is shown in fig. 16.
2. Place UNIT into record mode, and tape selector to normal position.
3. Read voltage on VTVM and calculate bias current by following formula:

$$\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10\ (\Omega)}$$

Standard value: 0.7±0.3mA (Normal position)

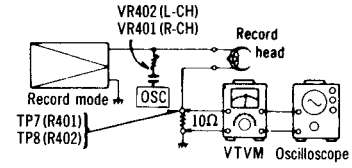


Fig. 16

4. Adjust VR402 (L-CH) and VR401 (R-CH).
5. Set the tape selector to each position.
6. Make sure that the measured value is within standard.

Standard value: 0.75±0.3mA (Fe-Cr position)
1.0±0.3mA (CrO_2 position)
1.6±0.3mA (Metal position)

❷ Overall gain

Condition:
* Record/playback mode
* Tape selector
  - ··· Normal position
  - ··· Fe-Cr position
  - ··· CrO_2 position
  - ··· Metal position
* Input level controls ··· MAX
* Output level control ··· MAX
* Standard input level:
  - MIC ····· −72±3dB
  - LINE IN ··· −24±3dB

Equipment:
* VTVM
* AF oscillator
* ATT
* Oscilloscope
* Test tape (reference blank tape)
  - ··· QZZCRA for Normal
  - ··· QZZCRX for Fe-Cr
  - ··· QZZCRY for CrO_2
  - ··· QZZCRZ for Metal

1. Test equipment connection is shown in fig. 17.
2. Place the test tape (QZZCRA) in the cassette holder.
3. Place UNIT into record mode, and tape selector to normal position.
4. Supply 1kHz signal (−24dB) from AF oscillator, through ATT to LINE IN.
5. Adjust ATT until monitor level at LINE OUT becomes 0.7V.
6. Using test tape, make recording.
7. Playback recorded tape, and measure the output level at LINE OUT on VTVM.

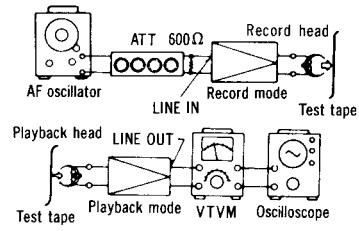


Fig. 17

Standard value: 0.7V±1.5dB (Normal position)

8. If measured value is not within standard, adjust VR203 (L-CH), VR204 (R-CH).
9. Repeat from step (4).
10. Change the tape selector to each position.
11. Change test tape to Fe-Cr (QZZCRY), CrO_2 (QZZCRX) and Metal (QZZCRZ).
12. Place UNIT into record mode.
13. Playback recorded tape, and measure the output level at LINE OUT on VTVM.

Standard value: 0.7V±1.5dB (Fe-Cr, CrO_2 and Metal position)

14. If measured value is not within standard, adjust as follows.
15. Adjust overall gain by short-circuiting or opening the point on the printed pattern in fig. 18, so that each positions approach their standard values.
16. Refer to the following tables for overall gain adjustment.

Fe-Cr position (L-CH)

Gain	Point (d)	Point (e)
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

CrO_2 position (L-CH)

Gain	Point (f)	Point (g)
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

Metal position (L-CH)

Gain	Point (h)	Point (i)
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

Fe-Cr position (R-CH)

Gain	Point (d')	Point (e')
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

CrO_2 position (R-CH)

Gain	Point (f')	Point (g')
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

Metal position (R-CH)

Gain	Point (h')	Point (i')
LOW	CLOSE	CLOSE
↑	CLOSE	OPEN
↓	OPEN	CLOSE
HIGH	OPEN	OPEN

ITEM	MEASUREMENT & ADJUSTMENT

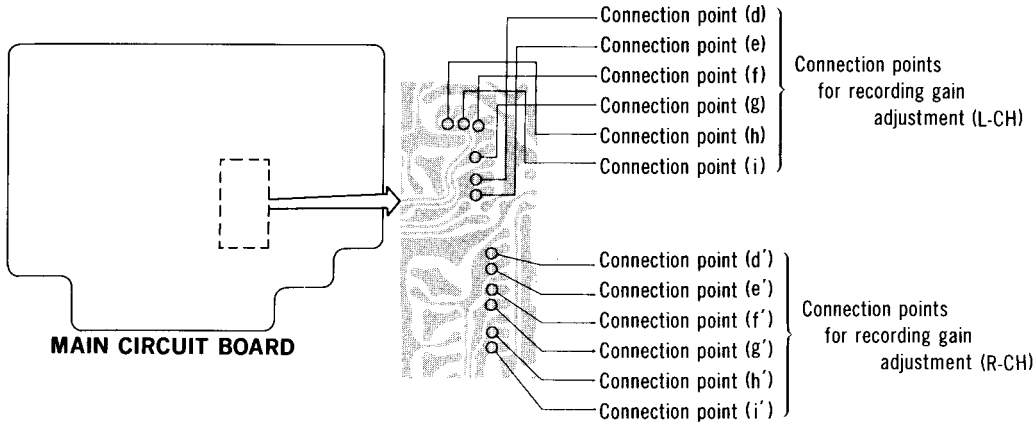


Fig. 18

K Overall frequency response

Condition:
- Record/playback mode
- Tape selector
  - ··· Normal position
  - ··· Fe-Cr position
  - ··· CrO_2 position
  - ··· Metal position
- Input level controls ··· MAX
- Output level control ··· MAX

Equipment:
- VTVM
- AF oscillator
- ATT
- Oscilloscope
- Resistor (600 Ω)
- Test tape (reference blank tape)
  - ··· QZZCRA for Normal
  - ··· QZZCRY for Fe-Cr
  - ··· QZZCRX for CrO_2
  - ··· QZZCRZ for Metal

Note 1:

Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).

Note 2:

Test tape QZZCRA to be supplied after July 1980 has higher recording sensitivity in the middle and high frequency range.

Overall frequency response chart (Normal)

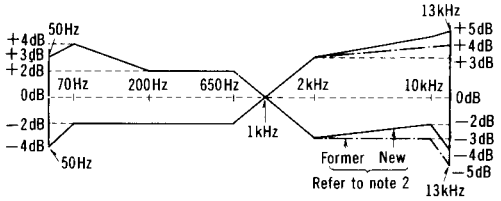


Fig. 19

- * This chart indicates the standard values for the new type of QZZCRA when in use.
- * This chart indicates the standard values for the former type of QZZCRA when in use.

The new type of QZZCRA is marked as shown in fig. 20.

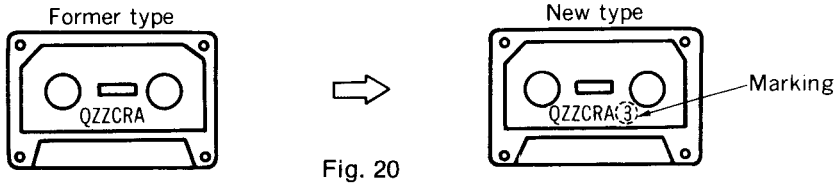


Fig. 20

Measurement

1. Test equipment connection is shown in fig. 17.
2. Place the normal test tape (QZZCRA) in the cassette holder.
3. Place UNIT into record mode, and tape selector to normal position.
4. Supply 1kHz signal from AF oscillator through ATT to LINE IN.
5. Adjust ATT so that input level is −20 dB below standard recording level (standard recording level = 0 VU).
6. At this time, LINE OUT level indicates 0.07 V.
7. Record each frequency 1kHz, 50Hz, 200Hz, 4kHz, 8kHz and 13kHz (15kHz for Fe-Cr, CrO_2 and metal).
8. Playback and express in dB the difference between playback output level of each frequency based on playback output level of 1kHz.
9. Make sure that the measured value is within the range specified in the overall frequency response chart (Shown in fig. 19).
10. Change test tape to Fe-Cr (QZZCRY), CrO_2 (QZZCRX) and metal (QZZCRZ).

Overall frequency response chart (Fe-Cr, CrO_2 and Metal)

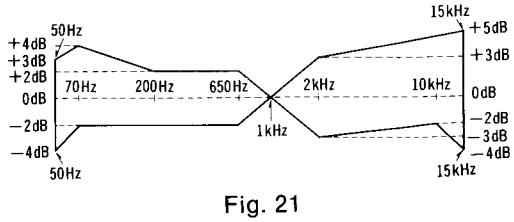


Fig. 21

ITEM	MEASUREMENT & ADJUSTMENT
	11. Set the tape selector to each position. 12. Measure in the same manner from step (3) to (8). 13. Make sure that the measured value is within the range specified in the overall frequency response chart for Fe-Cr, CrO_2 and metal tape (Shown in fiig. 21). **Adjustment-1: Using bias current** 1. When the frequency response between the middle and high frequency range becomes higher than the standard value, as shown by the solid line in fig. 22, increases the bias current by turning VR402 (L-CH), VR401 (R-CH). 2. When it becomes lower, as shown by dotted line, reduce the bias current by turning VR402 (L-CH), VR401 (R-CH). **Note:** For the method of bias current measurement, refer to "❶ Bias current adjustment" on page 7. **Adjustment-2: Using the peaking coil for recording equalization** When the frequency response is flat in the middle frequency range and makes a sharp rise or drop in the high frequency range, as shown in fig. 23, adjust by turning the following peaking coils. L203 (L-CH), L204 (R-CH).
Ⓛ Fluorescent meter Condition: * Record mode * Input level controls ··· MAX * Output level control ··· MAX * Tape selector ··· Normal position Equipment: * VTVM * AF oscillator * ATT	1. Test equipment connection is shown in fig. 17. 2. As shown in fig. 24, connecting the base of Q102 and ground stops the oscillation of the a stable multivibrator comprising Q102 and Q103. 3. Supply 1kHz signal (−24 dB) to the LINE IN jack, then press the record button. 4. Adjust the ATT so that the output level at LINE OUT jack becomes 0.7 V (The input level at this condition is termed the standard input level). 5. Adjustment at "−20 dB": A. Adjust the ATT so that input level is −20 dB below standard recording level. B. Adjust VR101 so that the −20 dB segment lights up in the −20 ± 0.8 dB range (L-CH ONLY) (See fig. 25). 6. Adjustment at "0 dB": A. Adjust the ATT so that the output level at LINE OUT jack becomes 0.7 V. (The input level at this condition is termed the standard input level.) B. Adjust VR102 so that the +1 dB segment lights up in the 0 ± 0.2 dB range of the standard input level (See fig. 26). 7. Repeat twice between steps (5) and (6) above. 8. Adjust ATT and check that all segments light up when an input signal level is increased to 10 dB higher than the standard input level (See fig. 27).
Ⓜ Dolby NR circuit Condition: * Record mode * Input level controls ··· MAX * Output level control ··· MAX Equipment: * VTVM * AF oscillator * ATT * Oscilloscope * Resistor (600 Ω)	1. Test equipment connection is shown in fig. 28. 2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain −34.5 dB at TP5 (L-CH), TP6 (R-CH) (frequency 5 kHz). 3. Confirm that the value at IN position is 8 (± 2.5) dB greater than the value at OUT position of Dolby NR switch.

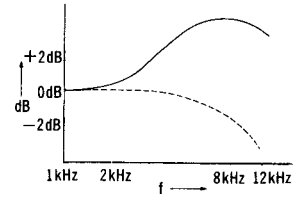


Fig. 22

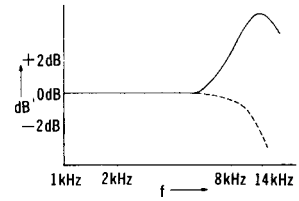


Fig. 23

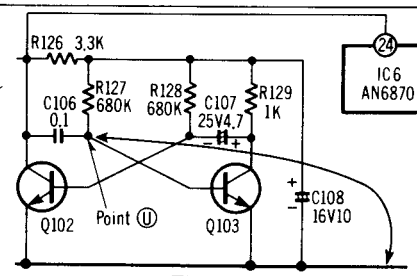


Fig. 24

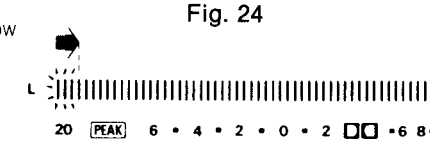


Fig. 25

Fig. 26

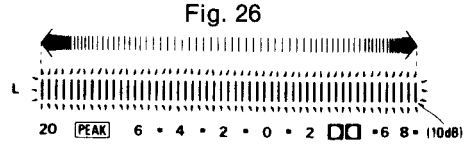


Fig. 27

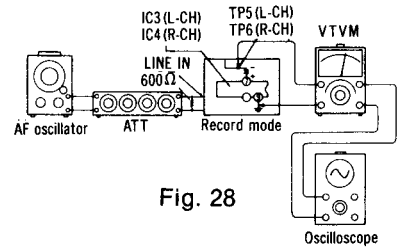
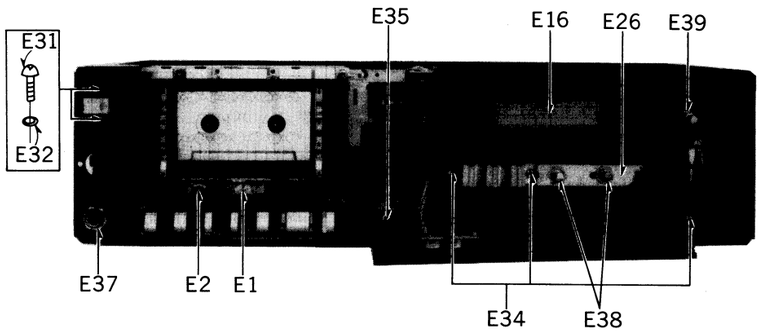
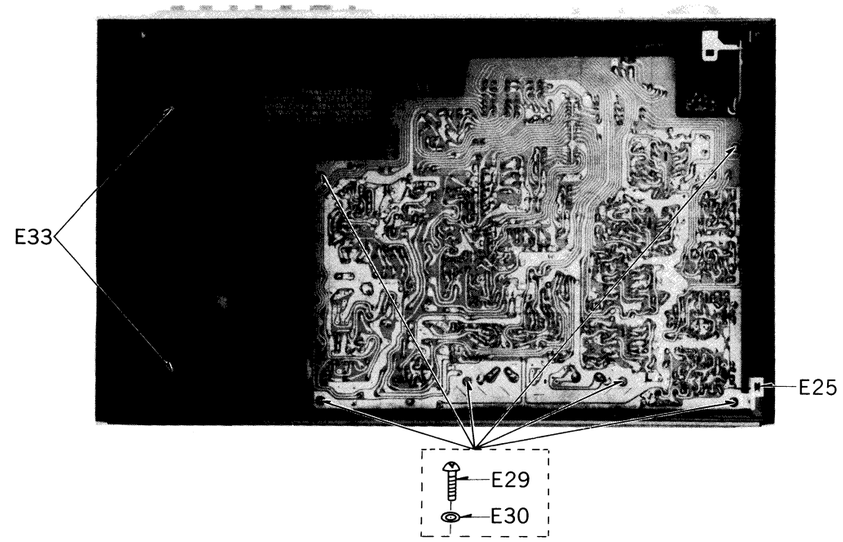
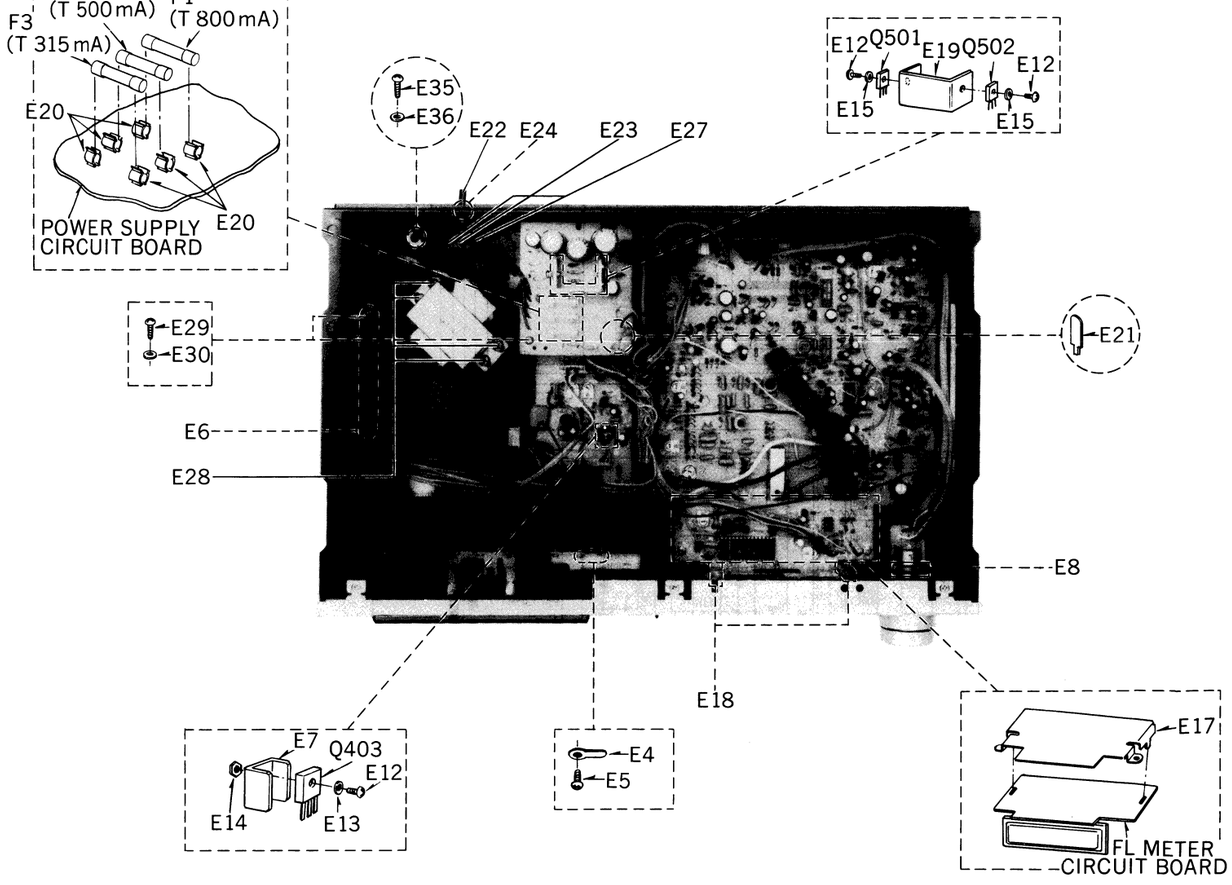


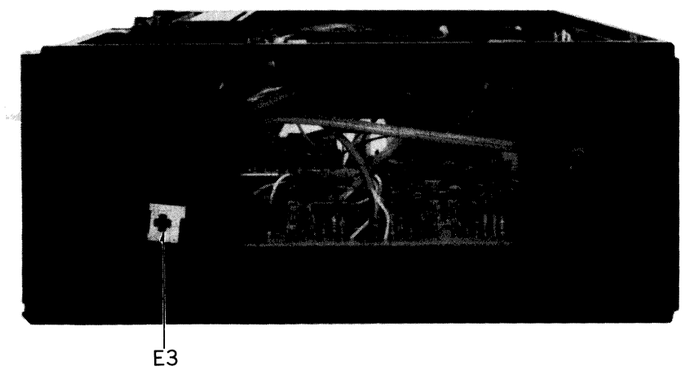
Fig. 28

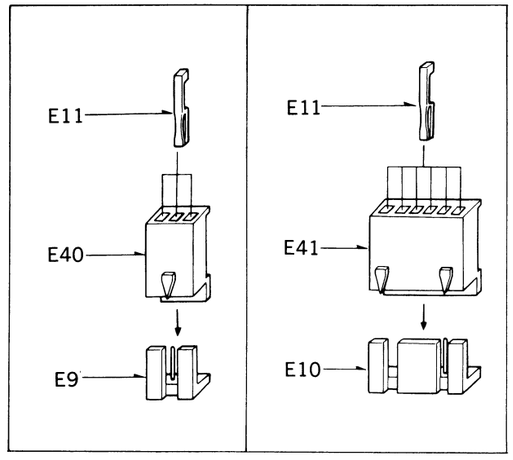
ELECTRICAL PARTS LOCATION







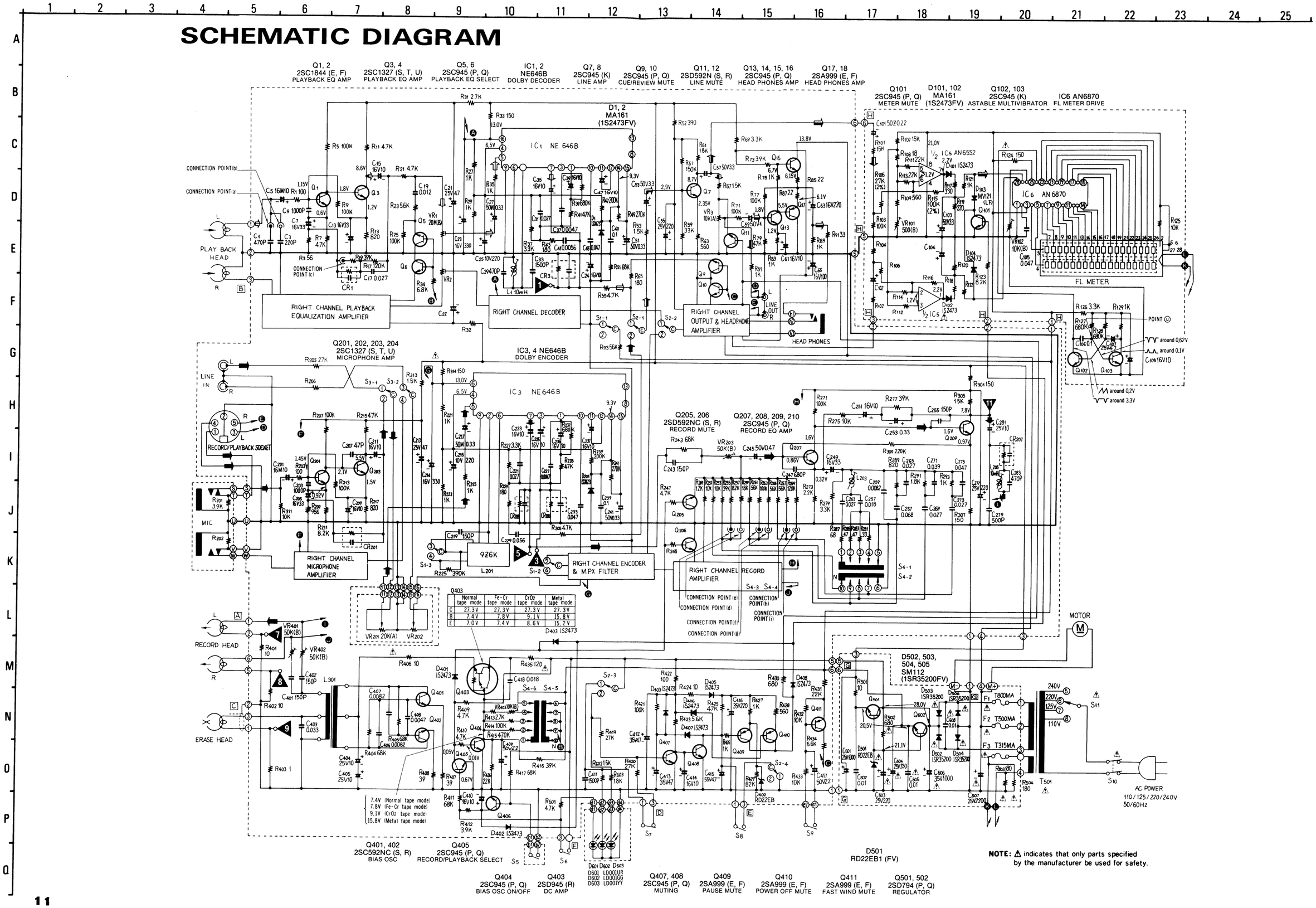




NOTE: ⚠ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.	Part Name & Description
	ELECTRICAL PARTS	
E1	QWY4125Z	Record/Playback Head (Combination Type)
E2	QWY2133Z	Erase Head
E3	QTSM0035	Earth Plate (A)
E4	QTD1001	Lug Terminal
E5	XTB3+10BFZ	Tapping Screw ⊕3×10
E6	QJT4017	4 Pin Terminal
E7	QTHM0010	Heat Sink (A)
E8	QTSM0021	Shield Plate
E9	QJP1921TN	3 Pin Post
E10	QJP1922TN	6 Pin Post
E11	QJT1054	Contact
E12	XSN3+8S	Screw ⊕3×8
E13	XWA3B	Washer 3φ
E14	XNG3ES	Nut 3φ
E15	XWG3	Washer 3φ
E16	QSLS006RF	FL Meter
E17	QTSM0040	Shield Plate
E18	QBMM0019	Meter Cushion
E19	QTHM0009	Heat Sink (B)
E20 ⚠	QTF1054	Fuse Holder
E21	QJT1067	1 Pin Terminal
E22 Ⓓ ⚠	SJA88	AC Power Cord
*For all European areas except United Kingdom.		
Ⓑ ⚠	QFC1205M	〃
*For United Kingdom.		
E23	QTD1164	Cord Clamper
E24	QBJ1425	Cord Bushing
E25	QTSM0043	Earth Terminal (1)
E26	QTSM0042	Earth Terminal (2)
E27	XTN3+16B	Tapping Screw ⊕3×16
E28	XTB4+10BFZ	Tapping Screw ⊕4×10
E29	XTN3+10B	Tapping Screw ⊕3×10
E30	XWG3	Washer 3φ
E31	XSN3+8S	Screw ⊕3×8
E32	XWA3B	Washer
E33	XTB3+10BFZ	Tapping Screw ⊕3×10
E34	XSN3+6S	Screw ⊕3×6
E35	XTB3+8BFZ	Tapping Screw ⊕3×8
E36	XWG3	Washer
E37	QNQ1070	Nut
E38	XNS8	Nut 8φ
E39	XNS9	Nut 9φ
E40	QJS1921TN	3 Pin Socket
E41	QJS1922TN	6 Pin Socket

SCHEMATIC DIAGRAM

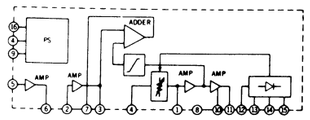


Q403	Normal tape mode	Fe-Cr tape mode	CrO2 tape mode	Metal tape mode
C	27.3 V	27.3 V	27.3 V	27.3 V
B	7.4 V	7.8 V	9.1 V	15.8 V
E	7.0 V	7.4 V	8.6 V	15.2 V

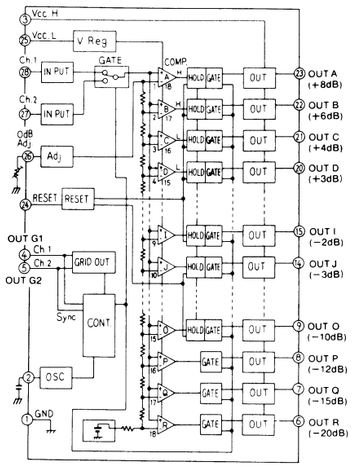
NOTE: ⚠ indicates that only parts specified by the manufacturer be used for safety.

EQUIVALENT CIRCUIT

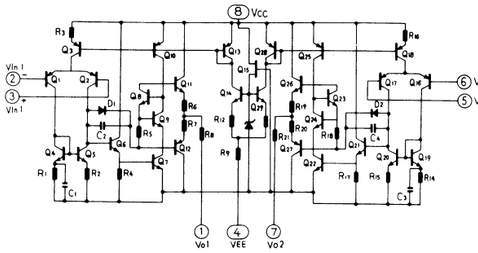
IC1-4 NE646B



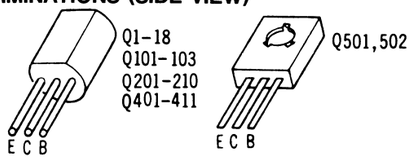
IC6 AN6870



IC305 AN6552



TERMINATIONS (SIDE VIEW)



NOTES:

- S1-1—S1-3 ..... Dolby in/out select switch (shown in out position).
- S2-1, S2-2 ..... Monitor select switch (shown in tape position).
- S3-1, S3-2 ..... Input select switch (shown in line position).
- S4-1—S4-4 ..... Tape select switch (shown in normal position).
- S5 ..... Record mute switch (shown in off position).
- S6 ..... Record switch (shown in off position).
- S7 ..... Muting switch (shown in off position).
- S8 ..... Pause switch (shown in off position).
- S9 ..... Cue/review muting switch (shown in off position).
- S10 ..... Power on/off switch.
- S11 ..... AC power voltage select switch.
- VR1, 2 ..... Playback gain adjustment VR.
- VR3, 4 ..... Output level control.
- VR101 ..... FL meter adjustment VR (for −20dB indication).
- VR102 ..... FL meter adjustment VR (for 0dB indication).
- VR201, 202 ..... Input level control.
- VR203, 204 ..... Overall gain adjustment VR.
- VR401, 402 ..... Bias current adjustment VR.
- VR403 ..... Erase current adjustment VR (for metal position).
- L1, 2 ..... Bias leakage adjustment coil (for playback amp).
- L203, 204 ..... Recording equalization adjustment coil.
- L205, 206 ..... Bias leakage adjustment coil (for record amp).
- Connection points (a), (a'), (b), (b'), (c) and (c')
  ..... Connection points for playback equalization adjustment.
- Connection points (d), (d'), (e), (e'), (f), (f'), (g), (g'), (h), (h'), (i) and (i')
  ..... Connection points for overall gain adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  K=1,000Ω, M=1,000kΩ.
- Capacity are in microfarads (μF) unless specified oterwise.
  P=Pico-farads.
- The mark (▼) shows test point. e.g. ▼=Test point 1.
- All voltage values shown in circuitry are under no signal condition and record mode with volume control at minimum position.
  For measurement, use VTVM.
- (⇨) this arrow indicates the flow of the playback signal.
- (➡) this arrow indicates the flow of the recording signal.
- (⇨) this arrow indicates the flow of the playback and recording signal in combination.

NOTES: RESISTORS
ERD ··· Carbon
ERG ··· Metal-oxide
ERS ··· Metal-oxide
ERO ··· Metal-film
ERX ··· Metal-film
ERQ ··· Fuse type metallic
ERC ··· Solid
ERF ···· Cement

CAPACITORS
ECG□ ····· Ceramic
ECK□ ····· Ceramic
ECC□ ····· Ceramic
ECF□ ····· Ceramic
ECQM ····· Polyester film
ECQE ····· Polyester film
ECQF ····· Polypropylene
ECE□ ····· Electrolytic
ECE□N ··· Non polar electrolytic
ECQS ····· Polystyrene
ECS□ ····· Tantalum
QCS ····· Tantalum

NOTE: ⚠ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.
RESISTORS	
R1, 2	ERD25FJ101
R3, 4	ERD25FJ560
R5, 6	ERO25CKF1003
R7, 8	ERD25FJ472
R9, 10	ERO25CKF1003
R11, 12	ERD25FJ472
R13, 14	ERD25FJ821
R17, 18	ERD25TJ124
R19, 20	ERD25TJ393
R21, 22	ERD25FJ472
R23, 24	ERD25FJ562
R25, 26	ERD25TJ104
R27, 28, 29, 30	ERD25FJ102
R31, 32	ERD25FJ272
R33	ERG1ANJ151
R34	ERD25FJ682
R35, 36	ERD25FJ102
R37, 38	ERD25FJ332
R39, 40	ERD25TJ684
R41, 42	ERD25TJ473
R43, 44	ERD25FJ181
R47, 48	ERD25TG2003
R49, 50	ERD25TJ274
R51	ERD25TJ683
R52	ERD25FJ391
R53, 54	ERD25FJ152
R55, 56	ERD25FJ472
R57, 58	ERD25TJ154
R59, 60	ERD25TJ333
R61, 62	ERD25FJ182
R63, 64	ERD25FJ561
R65, 66	ERD25FJ181
R67, 68	ERD25FJ152
R69	ERD25FJ332
R71, 72	ERD25TJ104
R73, 74	ERD25FJ392
R75, 76	ERD25FJ102
R77, 78	ERD25TJ104
R79, 80	ERD25TJ473
R81, 82, 83, 84	ERD25FJ102
R85, 86, 87, 88	ERD25FJ220
R89, 90	ERD25FJ102
R91, 92	ERD25FJ330
R93	ERD25TJ683
R101, 102	ERD25TJ223
R103, 104	ERD25TJ104
R105, 106	ERD25TG2702
R107	ERD25TJ153
R108	ERD25FJ180
R109	ERD25FJ561
R111, 112, 113, 114	ERD25TJ223
R115, 116	ERD25TG1003
R117, 118	ERD25FJ331
R119, 120	ERD25TJ224
R121, 122	ERD25FJ102
R123	ERD25FJ822
R124	ERQ14AJ151
R125	ERD25FJ103
R126	ERD25FJ332
R127, 128	ERD25TJ684
R129	ERD25FJ102
R201, 202	ERD25FJ392
R203, 204	ERD25FJ101
R205, 206	ERD25FJ273
R207, 208	ERO25CKF1003
R209, 210	ERD25FJ560
R211, 212	ERD25FJ822
R213, 214	ERO25CKF1003
R215, 216	ERD25FJ472
R217, 218	ERD25FJ821
R221, 222, 223, 224	ERD25FJ102
R225, 226	ERD25TJ394
R227, 228	ERD25FJ332
R229, 230	ERD25FJ181
R235, 236	ERD25TJ473
R237, 238	ERD25TJ684
R239, 240	ERD25TG2003
R241, 242	ERD25TJ274
R243, 244	ERD25TJ683
R247, 248	ERD25FJ472
R249, 250	ERD25TJ123
R251, 252, 253, 254	ERD25FJ103
R255, 256	ERD25TJ393
R257, 258	ERD25TJ823
R259, 260	ERD25TJ183
R261, 262	ERD25TJ563
R263, 264	ERD25TJ104
R265, 266, 267, 268	ERD25TJ563
R269, 270	ERD25TJ124
R271, 272	ERD25TJ104
R273, 274	ERD25FJ222
R275, 276	ERD25TJ103
R277, 278	ERD25TJ393
R279, 280	ERD25FJ332
R281, 282	ERD25FJ330
R283, 284, 285, 286	ERD25FJ470
R287, 288	ERD25FJ680
R289, 290	ERD25FJ821
R291, 292	ERD25FJ182
R293, 294	ERD25FJ102
R301	ERD25FJ331
R303, 304	ERD25FJ152
R305, 306	ERD25FJ472
R307, 308	ERD25FJ151
R309, 310	ERD25TJ224
R311, 312	ERD25FJ103
R313	ERD25FJ152
R314	ERG1ANJ151
R315, 316	ERD25FJ102
R401, 402	ERD25FJ100
R403	ERD25FJ1R0
R404, 405	ERD25TJ683
R406	ERD25FJ100
R407, 408	ERD25FJ390
R409, 410	ERD25FJ472
R411	ERD25FJ683
R412	ERD25FJ392
R413	ERD25FJ272
R414	ERD25TJ104
R415	ERD25TJ474
R416	ERD25TJ393
R417	ERD25TJ683
R419, 420	ERD25FJ273
R421	ERD25TJ104
R422	ERQ14AJ101P
R423	ERD25FJ562
R424	ERD25FJ100
R425	ERD25TJ473
R426, 427	ERD25FJ102
R428	ERD25FJ561
R429	ERD25TJ823
R430	ERD25FJ681
R431	ERD25FJ222
R432, 433	ERD25FJ103
R434	ERD25FJ562
R435	ERG1ANJ121
R436	ERD25TJ223
R501	ERQ14AJ100P
R502 ⚠	ERD25FJ681
R503, 504 ⚠	ERQ14AJ181P
R601	ERD25FJ472
R602	ERD50FJ152
R603	ERG12ANJ182
VARIABLE RESISTORS	
VR1, 2	EVNK4AA00B24
VR3, 4	QWKGTA024A14
VR101	EVNK4AA00B52
VR102	EVNK4AA00B14
VR201, 202	QVKDM80RA24
VR203, 204	EVNK4AA00B54
VR401, 402	EVNK4AA00B54
VR403	EVNK4AA00B24
CAPACITORS	
C1, 2	ECKD1H471KB
C3, 4	ECKD1H221KB
C5, 6	ECEA16M10R
C7, 8	ECEA1CS330
C9, 10	ECKD1H102KB
C13, 14	ECEA1CS330
C15, 16	ECEA1HS100
C17, 18	ECQM1H273JZ
C19, 20	ECQM1H123JZ
C21, 22	ECEA1ES470
C23	ECEA1CS331
C24	ECEA1HS100
C25, 26	ECEA1AS221
C27, 28	ECEA50MR33R
C29, 30	ECQP1471JZ
C31, 32	ECQM1H273JZ
C33, 34	ECKD1H152KB
C35, 36	ECEA1HS100
C37, 37	ECQM1H472JZ
C39, 40	ECEA1HS100
C41, 42	ECQM1H562JZ
C45, 46	ECQM1H473KZ
C47, 48	ECEA1HS100
C49, 50	ECQV05104JZ
C51, 52	ECEA50ZR33
C53, 54	ECEA2AS3R3
C55	ECEA1ES221
C57, 58	ECEA2AS3R3
C59, 60	ECEA2AS010
C61, 62	ECEA1HS100
C63, 64	ECEA1CS221
C65	ECEA1ES101
C101, 102	ECEA50ZR22
C103, 104	ECEA2AS3R3
C105	ECQM1H473KZ
C106	ECQV05104JZ
C107	ECEA1JS4R7
C108	ECEA1HS100
C201, 202	ECEA16M10R
C203, 204	ECKD1H102KB
C205, 206	ECEA1CS330
C207, 208	ECCD1H470K
C209, 210, 211, 212	ECEA1HS100
C213	ECEA1ES470
C214	ECEA1CS331
C215, 216	ECEA1AS221
C217, 218	ECEA50MR33R
C221, 222	ECQM1H273JZ
C223, 224, 225, 226	ECEA1HS100
C227, 228	ECQM1H472JZ
C229, 230	ECQM1H562JZ
C233, 234	ECQM1H473KZ
C235, 236, 237, 238	ECEA1HS100
C239, 240	ECQV05104JZ
C241, 242	ECEA50ZR33
C243, 244	ECKD1H151KB
C245, 246	ECEA50ZR47
C247, 248	ECKD1H681KB
C249, 250	ECEA1CS330
C251, 252	ECEA1HS100
C253, 254	ECEA50ZR33
C255, 256	ECKD1H151KB
C257, 258	ECQM1H183JZ
C259, 260	ECQM1H822KZ
C263, 264	ECQM1H333JZ
C265, 266	ECQM1H273KZ
C267, 268	ECQM1H683KZ
C269, 270	ECQM1H273KZ
C271, 272	ECQM1H393KZ
C273, 274	ECQM1H273KZ
C275, 276	ECQM1H473KZ
C277	ECEA1ES471
C279, 280	ECKD1H152KB
C281, 282	ECEA1JS4R7
C283, 284	ECQP1471JZ
C401, 402	ECKD1H151KB
C403	ECQF4333KZH
C404, 405	ECEA1HS100
C406, 407	ECQM1H822KZ
C408	ECQM1H472KZ
C409	ECEA2AS2R2
C410	ECEA1HS100
C412, 413	ECEA1HS470
C414	ECEA1HS100
C415	ECEA1JS4R7
C416	ECEA1VS221
C417	ECEA2AS2R2
C418	ECQM1H183KZ
C501	ECEA1VS102
C502	ECKD1H103P
C503 ⚠	ECEA1ES221
C504 ⚠	ECEA1ES331
C505 ⚠	ECKD1H103P
C506 ⚠	ECEA1VS102
C507 ⚠	ECEA1ES222
C508	ECKD1H103P
DIODES & RECTIFIERS	
D1, 2	MA161
D101, 102	MA161
D103	MV121
D104	MA161
D201, 202	MA161
D401, 402, 403, 404, 405, 406, 407, 408	MA161
D409	RD22EB1
D501 ⚠	RD22EB1
D502, 503, 504, 505 ⚠	SM112
D601	LD001UR
D602	LD001GG
D603	LD001YY
TRANSISTORS	
Q1, 2	2SC1844E
Q3, 4	2SC1327
Q5, 6, 7, 8, 9, 10	2SC945
Q11, 12	2SD592NCS
Q13, 14, 15, 16	2SC945
Q17, 18	2SA999E
Q101, 102, 103	2SC945
Q201, 202, 203, 204	2SC1327
Q205, 206	2SD592NCS
Q207, 208, 209, 210	2SC945
Q401, 402	2SC592NCS
Q403	2SD946
Q404, 405, 406, 407, 408	2SC945
Q409, 410, 411	2SA999E
Q501, 502	2SD794P
INTEGRATED CIRCUITS	
IC1, 2, 3, 4	NE646B
IC5	AN6552
IC6	AN6870
COMBINATION PARTS	
CR1, 2	EXRP681K472
CR3, 4	EXRP122K473
CR201, 202	EXRP681K472
CR203, 204, 205, 206	EXRP122K473
CR207, 208	EXRP222K222

Ref. No.	Part No.	Part Name & Description
TRANSFORMER		
T501 ⚠	QLPD51EME	AC Power Transformer
COILS		
L1, 2	QLQX1032W	Bias Trap Coil (for Playback System)
L201, 202	QLM9Z6K	Multiplex Filter
L203, 204	QLQC2721K	Peaking Coil
L205, 206	QLQX1032W	Bias Trap Coil (for Recording System)
L301	QLB0158	Bias Oscillation Coil
SWITCHES		
S1, 2, 3	QSWY305	Push Switch (Dolby NR, Monitor Selector, Input Selector)
S4	QSR6402A	Rotary Switch (Tape Selector)
S5	EVQPAR11K	Push Switch (Rec-Mute)
S6	QSB0178	Leaf Switch (Record/Playback Selector)
S7, 8, 9	QSB0253M	Leaf Switch
S10 ⚠	RSH1B04ZAS	Push Switch (Power ON/OFF)
S11 ⚠	QSR1407H	Rotary Switch (AC Power Voltage Selector)
JACKS		
J1	QJA0257H	Microphone Jack
J2	QJA0255H	Headphones Jack
J3	QEJ5002H	Jack Board Assembly
FUSES		
F1 ⚠	XBAQ0009	Fuse (T 800mA)
F2 ⚠	XBAQ0003	Fuse (T 500mA)
F3 ⚠	XBAQ0006	Fuse (T 315mA)

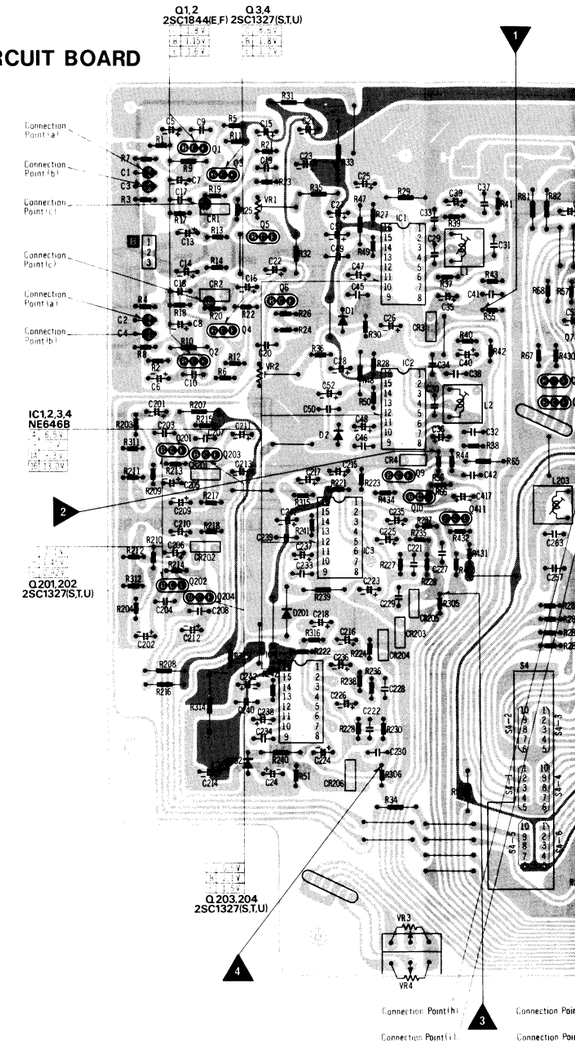
SPECIFICATIONS

* Input level controls ··· MAX
* Output level control ··· MAX

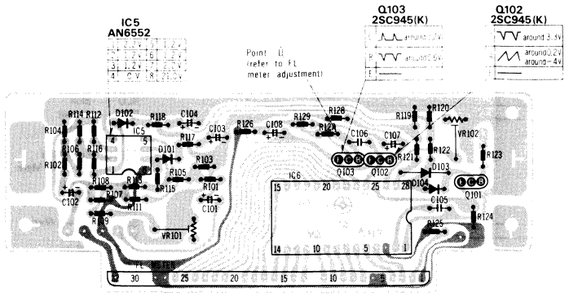
Playback S/N ratio Test tape ··· QZZCFM	More than 47dB (without NAB filter)
Overall distortion Test tape ··· QZZCRA for Normal ··· QZZCRX for CrO_2 ··· QZZCRY for Fe-Cr ··· QZZCRZ for Metal	Less than 2.3% (Normal) Less than 3.3% (Fe-Cr, CrO_2 and Metal)
Overall S/N ratio Test tape ··· QZZCRX	More than 45dB (without NAB filter)

CIRCUIT BOARDS

MAIN CIRCUIT BOARD



FL METER CIRCUIT BOARD



...ORS
... Carbon
... Metal-oxide
... Metal-oxide
... Metal-film
... Metal-film
... Fuse type metallic
... Solid
... Cement

CAPACITORS
ECG□ ····· Ceramic
ECK□ ····· Ceramic
ECC□ ····· Ceramic
ECF□ ····· Ceramic
ECQM ····· Polyester film
ECQE ····· Polyester film
ECQF ····· Polypropylene
ECE□ ····· Electrolytic
ECEAN ··· Non polar electrolytic
ECQS ····· Polystyrene
ECS□ ····· Tantalum
QCS ····· Tantalum

NOTE: ⚠ indicates that only parts specified by the manufacturer be used for safety.

...rt No.	Ref. No.	Part No.
...RS	R124	ERQ14AJ151
...5FJ101	R125	ERD25FJ103
...5FJ560	R126	ERD25FJ332
...CKF1003	R127, 128	ERD25TJ684
...5FJ472	R129	ERD25FJ102
...CKF1003	R201, 202	ERD25FJ392
...5FJ472	R203, 204	ERD25FJ101
...5FJ821	R205, 206	ERD25FJ273
...TJ124	R207, 208	ERO25CKF1003
...5TJ393	R209, 210	ERD25FJ560
...FJ472	R211, 212	ERD25FJ822
	R213, 214	ERO25CKF1003
...FJ562	R215, 216	ERD25FJ472
...TJ104	R217, 218	ERD25FJ821
...FJ102	R221, 222, 223, 224	ERD25FJ102
...FJ272	R225, 226	ERD25TJ394
...NJ151	R227, 228	ERD25FJ332
...FJ682	R229, 230	ERD25FJ181
...FJ102	R235, 236	ERD25TJ473
...FJ332	R237, 238	ERD25TJ684
...TJ684	R239, 240	ERD25TG2003
...TJ473	R241, 242	ERD25TJ274
	R243, 244	ERD25TJ683
...FJ181	R247, 248	ERD25FJ472
...TG2003		
...TJ274	R249, 250	ERD25TJ123
...TJ683		
...FJ391	R251, 252, 253, 254	ERD25FJ103
...FJ152		
...FJ472	R255, 256	ERD25TJ393
...TJ154	R257, 258	ERD25TJ823
...TJ333	R259, 260	ERD25TJ183
...TJ182	R261, 262	ERD25TJ563
	R263, 264	ERD25TJ104
...FJ561	R265, 266, 267, 268	ERD25TJ563
...FJ181		
...FJ152	R269, 270	ERD25TJ124
...FJ332	R271, 272	ERD25TJ104
...TJ104		
...FJ392	R273, 274	ERD25FJ222
...FJ102	R275, 276	ERD25TJ103
...TJ104	R277, 278	ERD25TJ393
...TJ473	R279, 280	ERD25FJ332
	R281, 282	ERD25FJ330
...FJ102	R283, 284, 285, 286	ERD25FJ470
...FJ220	R287, 288	ERD25FJ680
...FJ102	R289, 290	ERD25FJ821
...FJ330	R291, 292	ERD25FJ182
...FJ683	R293, 294	ERD25FJ102
...FJ223		
...FJ104	R301	ERD25FJ331
...G2702	R303, 304	ERD25FJ152
...FJ153	R305, 306	ERD25FJ472
...FJ180	R307, 308	ERD25FJ151
...FJ561	R309, 310	ERD25TJ224
	R311, 312	ERD25FJ103
	R313	ERD25FJ152
...FJ223	R314	ERG1ANJ151
...G1003	R315, 316	ERD25FJ102
...FJ331	R401, 402	ERD25FJ100
...FJ224		
...FJ102	R403	ERD25FJ1R0
...FJ822	R404, 405	ERD25TJ683

Ref. No.	Part No.
R406	ERD25FJ100
R407, 408	ERD25FJ390
R409, 410	ERD25FJ472
R411	ERD25FJ683
R412	ERD25FJ392
R413	ERD25FJ272
R414	ERD25TJ104
R415	ERD25TJ474
R416	ERD25TJ393
R417	ERD25TJ683
R419, 420	ERD25FJ273
R421	ERD25TJ104
R422	ERQ14AJ101P
R423	ERD25FJ562
R424	ERD25FJ100
R425	ERD25TJ473
R426, 427	ERD25FJ102
R428	ERD25FJ561
R429	ERD25TJ823
R430	ERD25FJ681
R431	ERD25FJ222
R432, 433	ERD25FJ103
R434	ERD25FJ562
R435	ERG1ANJ121
R436	ERD25TJ223
R501	ERQ14AJ100P
R502 ⚠	ERD25FJ681
R503, 504 ⚠	ERQ14AJ181P
R601	ERD25FJ472
R602	ERD50FJ152
R603	ERG12ANJ182

VARIABLE RESISTORS

Ref. No.	Part No.
VR1, 2	EVNK4AA00B24
VR3, 4	QWKGTA024A14
VR101	EVNK4AA00B52
VR102	EVNK4AA00B14
VR201, 202	QVKDM80RA24
VR203, 204	EVNK4AA00B54
VR401, 402	EVNK4AA00B54
VR403	EVNK4AA00B24

CAPACITORS

Ref. No.	Part No.
C1, 2	ECKD1H471KB
C3, 4	ECKD1H221KB
C5, 6	ECEA16M10R
C7, 8	ECEA1CS330
C9, 10	ECKD1H102KB
C13, 14	ECEA1CS330
C15, 16	ECEA1HS100
C17, 18	ECQM1H273JZ
C19, 20	ECQM1H123JZ
C21, 22	ECEA1ES470
C23	ECEA1CS331
C24	ECEA1HS100
C25, 26	ECEA1AS221
C27, 28	ECEA50MR33R
C29, 30	ECQP1471JZ
C31, 32	ECQM1H273JZ
C33, 34	ECKD1H152KB
C35, 36	ECEA1HS100
C37, 38	ECQM1H472JZ
C39, 40	ECEA1HS100
C41, 42	ECQM1H562JZ
C45, 46	ECQM1H473KZ
C47, 48	ECEA1HS100
C49, 50	ECQV05104JZ
C51, 52	ECEA50ZR33
C53, 54	ECEA2AS3R3
C55	ECEA1ES221
C57, 58	ECEA2AS3R3
C59, 60	ECEA2AS010
C61, 62	ECEA1HS100
C63, 64	ECEA1CS221
C65	ECEA1ES101
C101, 102	ECEA50ZR22
C103, 104	ECEA2AS3R3
C105	ECQM1H473KZ
C106	ECQV05104JZ
C107	ECEA1JS4R7
C108	ECEA1HS100
C201, 202	ECEA16M10R
C203, 204	ECKD1H102KB
C205, 206	ECEA1CS330
C207, 208	ECCD1H470K
C209, 210, 211, 212	ECEA1HS100
C213	ECEA1ES470
C214	ECEA1CS331
C215, 216	ECEA1AS221
C217, 218	ECEA50MR33R
C221, 222	ECQM1H273JZ
C223, 224, 225, 226	ECEA1HS100
C227, 228	ECQM1H472JZ
C229, 230	ECQM1H562JZ
C233, 234	ECQM1H473KZ
C235, 236, 237, 238	ECEA1HS100
C239, 240	ECQV05104JZ
C241, 242	ECEA50ZR33
C243, 244	ECKD1H151KB
C245, 246	ECEA50ZR47
C247, 248	ECKD1H681KB
C249, 250	ECEA1CS330
C251, 252	ECEA1HS100
C253, 254	ECEA50ZR33
C255, 256	ECKD1H151KB
C257, 258	ECQM1H183JZ
C259, 260	ECQM1H822KZ
C263, 264	ECQM1H333JZ
C265, 266	ECQM1H273KZ
C267, 268	ECQM1H683KZ
C269, 270	ECQM1H273KZ
C271, 272	ECQM1H393KZ
C273, 274	ECQM1H273KZ
C275, 276	ECQM1H473KZ
C277	ECEA1ES471
C279, 280	ECKD1H152KB
C281, 282	ECEA1JS4R7
C283, 284	ECQP1471JZ
C401, 402	ECKD1H151KB
C403	ECQF4333KZH
C404, 405	ECEA1HS100
C406, 407	ECQM1H822KZ
C408	ECQM1H472KZ
C409	ECEA2AS2R2
C410	ECEA1HS100
C412, 413	ECEA1HS470
C414	ECEA1HS100
C415	ECEA1JS4R7
C416	ECEA1VS221
C417	ECEA2AS2R2
C418	ECQM1H183KZ
C501	ECEA1VS102
C502	ECKD1H103P
C503 ⚠	ECEA1ES221
C504 ⚠	ECEA1ES331
C505 ⚠	ECKD1H103P
C506 ⚠	ECEA1VS102
C507 ⚠	ECEA1ES222
C508	ECKD1H103P

DIODES & RECTIFIERS

Ref. No.	Part No.
D1, 2	MA161
D101, 102	MA161
D103	MV121
D104	MA161
D201, 202	MA161
D401, 402, 403, 404, 405, 406, 407, 408	MA161
D409	RD22EB1
D501 ⚠	RD22EB1
D502, 503, 504, 505 ⚠	SM112
D601	LD001UR
D602	LD001GG
D603	LD001YY

TRANSISTORS

Ref. No.	Part No.
Q1, 2	2SC1844E
Q3, 4	2SC1327
Q5, 6, 7, 8, 9, 10	2SC945
Q11, 12	2SD592NCS
Q13, 14, 15, 16	2SC945
Q17, 18	2SA999E
Q101, 102, 103	2SC945
Q201, 202, 203, 204	2SC1327
Q205, 206	2SD592NCS
Q207, 208, 209, 210	2SC945
Q401, 402	2SC592NCS
Q403	2SD946
Q404, 405, 406, 407, 408	2SC945
Q409, 410, 411	2SA999E
Q501, 502	2SD794P

INTEGRATED CIRCUITS

Ref. No.	Part No.
IC1, 2, 3, 4	NE646B
IC5	AN6552
IC6	AN6870

COMBINATION PARTS

Ref. No.	Part No.
CR1, 2	EXRP681K472
CR3, 4	EXRP122K473
CR201, 202	EXRP681K472
CR203, 204, 205, 206	EXRP122K473
CR207, 208	EXRP222K222

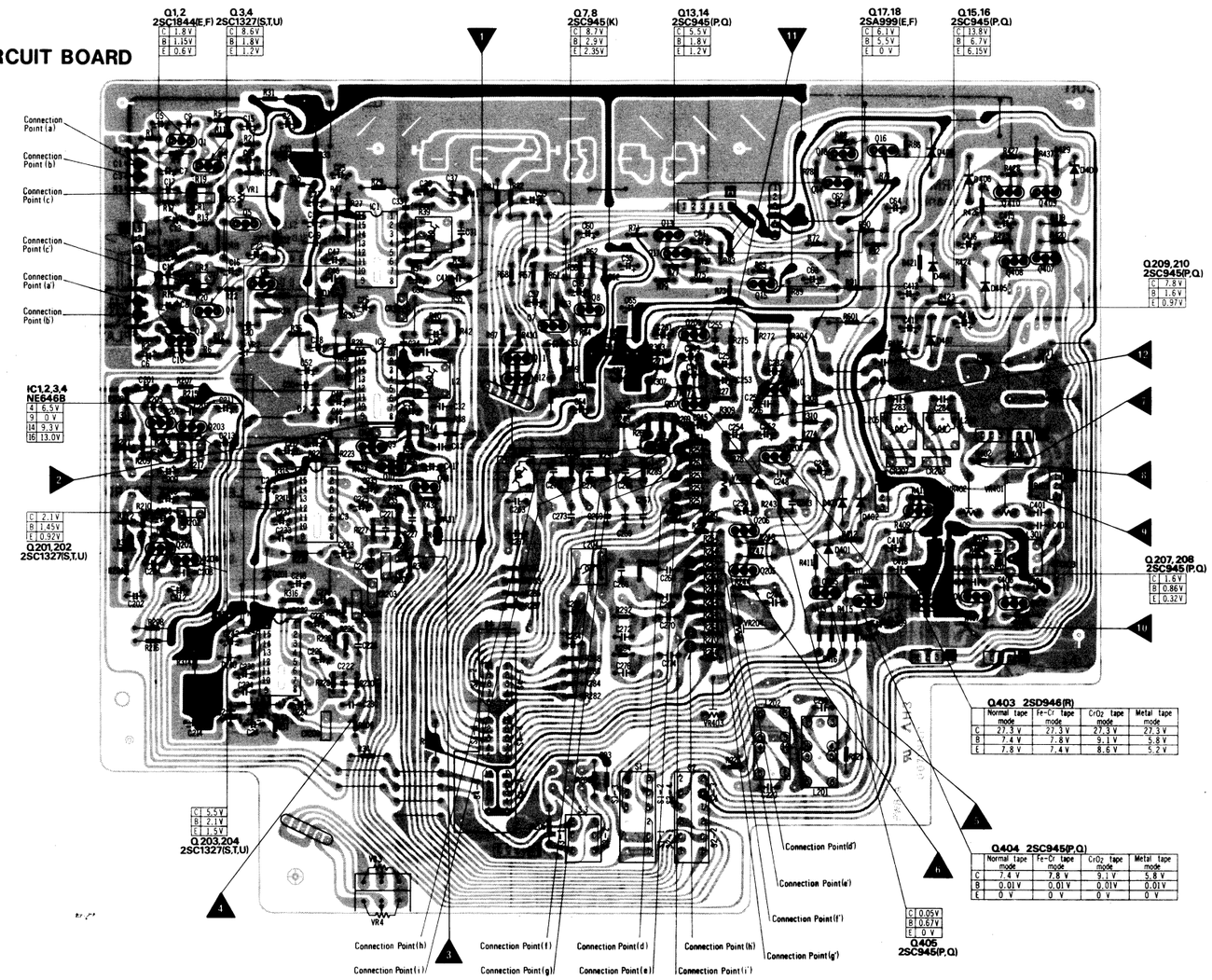
Ref. No.		Part No.	Part Name & Description
			TRANSFORMER
T501	⚠	QLPD51EME	AC Power Transformer
			COILS
L1, 2		QLQX1032W	Bias Trap Coil (for Playback System)
L201, 202		QLM9Z6K	Multiplex Filter
L203, 204		QLQC2721K	Peaking Coil
L205, 206		QLQX1032W	Bias Trap Coil (for Recording System)
L301		QLB0158	Bias Oscillation Coil
			SWITCHES
S1, 2, 3		QSWY305	Push Switch (Dolby NR, Monitor Selector, Input Selector)
S4		QSR6402A	Rotary Switch (Tape Selector)
S5		EVQPAR11K	Push Switch (Rec-Mute)
S6		QSB0178	Leaf Switch (Record/Playback Selector)
S7, 8, 9		QSB0253M	Leaf Switch
S10	⚠	RSH1B04ZAS	Push Switch (Power ON/OFF)
S11	⚠	QSR1407H	Rotary Switch (AC Power Voltage Selector)
			JACKS
J1		QJA0257H	Microphone Jack
J2		QJA0255H	Headphones Jack
J3		QEJ5002H	Jack Board Assembly
			FUSES
F1	⚠	XBAQ0009	Fuse (T 800mA)
F2	⚠	XBAQ0003	Fuse (T 500mA)
F3	⚠	XBAQ0006	Fuse (T 315mA)

...evel controls ··· MAX
...t level control ··· MAX

More than 47dB (without NAB filter)
Less than 2.3% (Normal)
Less than 3.3% (Fe-Cr, CrO_2 and Metal)
More than 45dB (without NAB filter)

CIRCUIT BOARDS

MAIN CIRCUIT BOARD



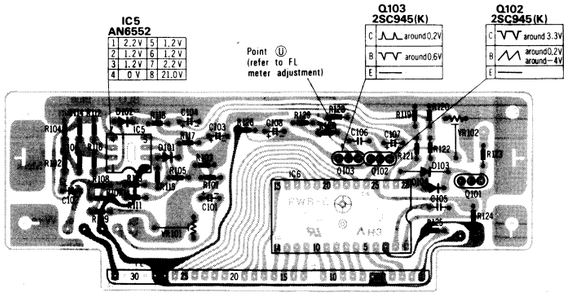
Q403 2SD946(R)

	Normal tape mode	Fe-Cr tape mode	CrO_2 tape mode	Metal tape mode
C	27.3 V	27.3 V	27.3 V	27.3 V
B	7.4 V	7.8 V	9.1 V	5.8 V
E	7.8 V	7.4 V	8.6 V	5.2 V

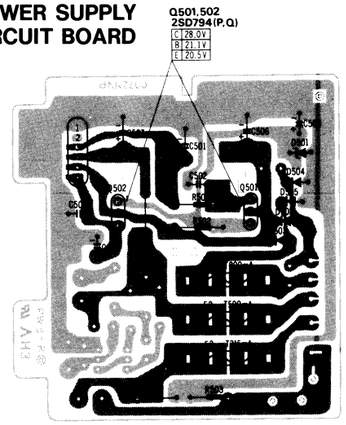
Q404 2SC945(P,Q)

	Normal Tape mode	Fe-Cr tape mode	CrO_2 tape mode	Metal tape mode
C	7.4 V	7.8 V	9.1 V	5.8 V
B	0.01V	0.01V	0.01V	0.01V
E	0 V	0 V	0 V	0 V

FL METER CIRCUIT BOARD



POWER SUPPLY CIRCUIT BOARD

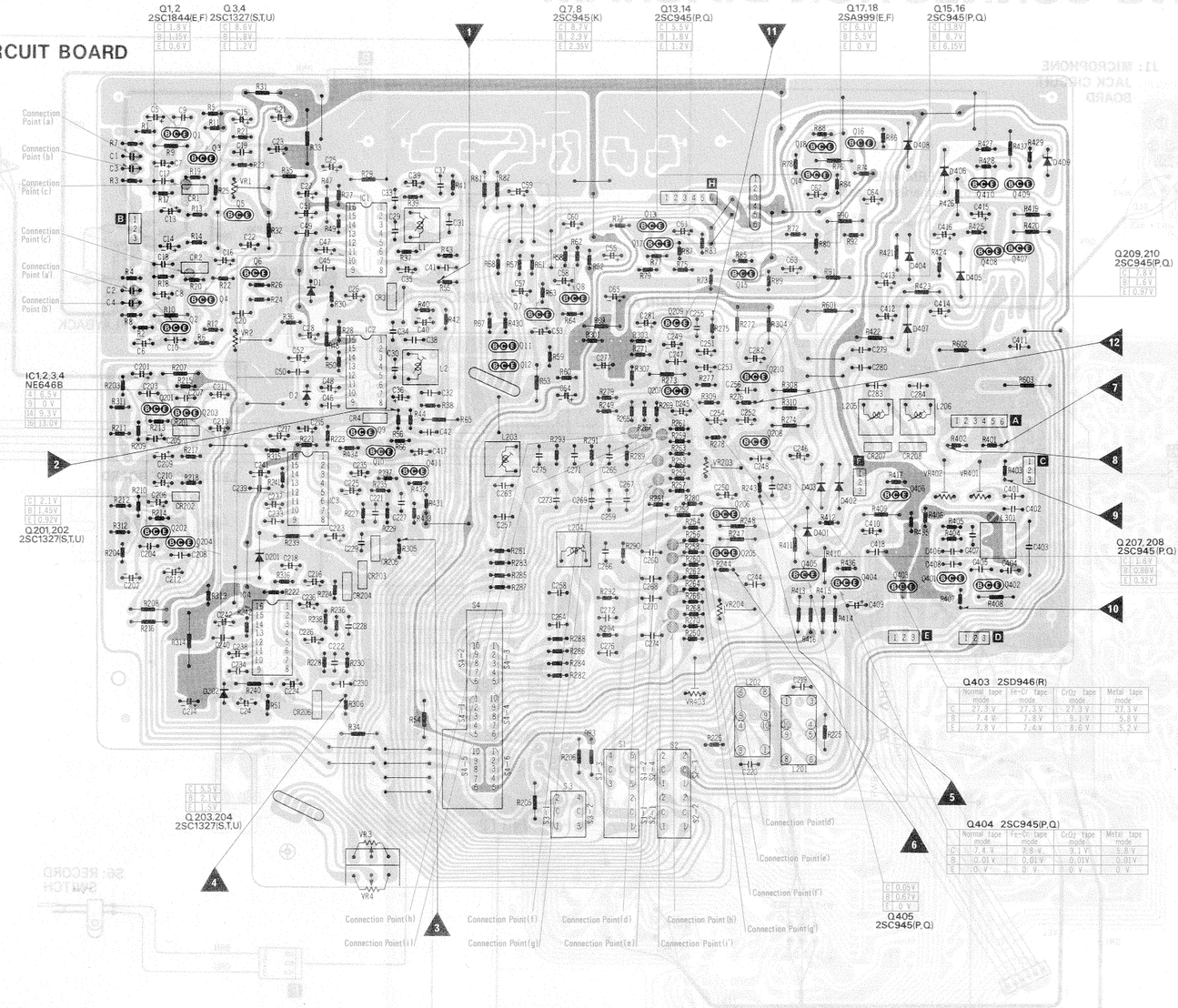


NOTES:

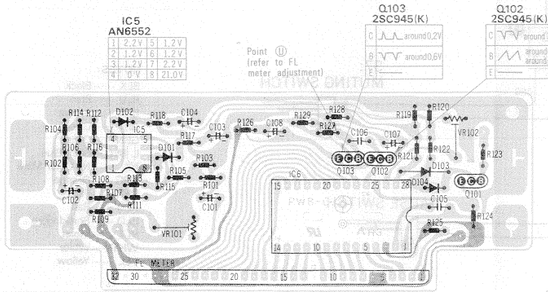
- The circuit shown in ■ on the conductor is +B (bias) circuit.
- The circuit shown in ▒ on the conductor indicates printed circuit on the back side of the printed circuit board.
- Values indicated in □ are DC voltage between the ground and electrical parts.
- The voltage indicates are measured during record mode.

CIRCUIT BOARDS

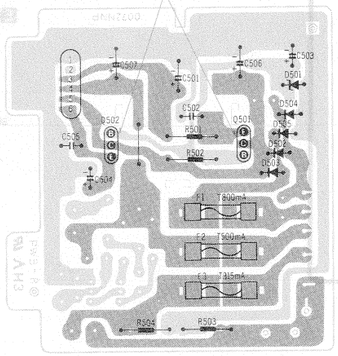
MAIN CIRCUIT BOARD



FL METER CIRCUIT BOARD



POWER SUPPLY CIRCUIT BOARD



NOTES:

- The circuit shown in ▬ on the conductor is +B (bias) circuit.
- The circuit shown in ▬ on the conductor indicates printed circuit on the back side of the printed circuit board.
- Values indicated in ▭ are DC voltage between the ground and electrical parts.
- The voltage indicates are measured during record mode.

Part No.	Ref. No.	Part No.
RS		
5FJ101	R124	ERQ14AJ151
5FJ560	R125	ERD25FJ103
CKF1003	R126	ERD25FJ332
5FJ472	R127, 128	ERD25TJ684
CKF1003	R129	ERD25FJ102
5FJ472	R201, 202	ERD25FJ392
5FJ821	R203, 204	ERD25FJ101
TJ124	R205, 206	ERD25FJ273
TJ393	R207, 208	ERD25CKF1003
FJ472	R209, 210	ERD25FJ560
	R211, 212	ERD25FJ822
FJ562	R213, 214	ERD25CKF1003
TJ104	R215, 216	ERD25FJ472
	R217, 218	ERD25FJ821
FJ102	R221, 222, 223, 224	ERD25FJ102
FJ272	R225, 226	ERD25TJ394
NJ151	R227, 228	ERD25FJ332
FJ682	R229, 230	ERD25FJ181
FJ102	R235, 236	ERD25TJ473
FJ332	R237, 238	ERD25TJ684
TJ684	R239, 240	ERD25TG2003
TJ473	R241, 242	ERD25TJ274
	R243, 244	ERD25TJ683
FJ181	R247, 248	ERD25FJ472
TG2003		
TJ274	R249, 250	ERD25TJ123
TJ683		
FJ391	R251, 252, 253, 254	ERD25FJ103
FJ152		
FJ472	R255, 256	ERD25TJ393
TJ154	R257, 258	ERD25TJ823
TJ333	R259, 260	ERD25TJ183
TJ182	R261, 262	ERD25TJ563
	R263, 264	ERD25TJ104
FJ561	R265, 266, 267, 268	ERD25TJ563
FJ181		
FJ152	R269, 270	ERD25TJ124
FJ332	R271, 272	ERD25TJ104
TJ104		
FJ392	R273, 274	ERD25FJ222
FJ102	R275, 276	ERD25TJ103
TJ104	R277, 278	ERD25TJ393
TJ473	R279, 280	ERD25FJ332
	R281, 282	ERD25FJ330
FJ102	R283, 284, 285, 286	ERD25FJ470
FJ220	R287, 288	ERD25FJ680
FJ102	R289, 290	ERD25FJ821
FJ330	R291, 292	ERD25FJ182
FJ683	R293, 294	ERD25FJ102
FJ223		
FJ104	R301	ERD25FJ331
G2702	R303, 304	ERD25FJ152
FJ153	R305, 306	ERD25FJ472
FJ180	R307, 308	ERD25FJ151
FJ561	R309, 310	ERD25TJ224
	R311, 312	ERD25FJ103
	R313	ERD25FJ152
FJ223	R314	ERG1ANJ151
G1003	R315, 316	ERD25FJ102
FJ331	R401, 402	ERD25FJ100
FJ224		
FJ102	R403	ERD25FJ1R0
FJ822	R404, 405	ERD25TJ683

Ref. No.	Part No.
R406	ERD25FJ100
R407, 408	ERD25FJ390
R409, 410	ERD25FJ472
R411	ERD25FJ683
R412	ERD25FJ392
R413	ERD25FJ272
R414	ERD25TJ104
R415	ERD25TJ474
R416	ERD25TJ393
R417	ERD25TJ683
R419, 420	ERD25FJ273
R421	ERD25TJ104
R422	ERQ14AJ101P
R423	ERD25FJ562
R424	ERD25FJ100
R425	ERD25TJ473
R426, 427	ERD25FJ102
R428	ERD25FJ561
R429	ERD25TJ823
R430	ERD25FJ681
R431	ERD25FJ222
R432, 433	ERD25FJ103
R434	ERD25FJ562
R435	ERG1ANJ121
R436	ERD25TJ223
R501	ERQ14AJ100P
R502 ⚠	ERD25FJ681
R503, 504 ⚠	ERQ14AJ181P
R601	ERD25FJ472
R602	ERD50FJ152
R603	ERG12ANJ182

VARIABLE RESISTORS

Ref. No.	Part No.
VR1, 2	EVNK4AA00B24
VR3, 4	QWKGTA024A14
VR101	EVNK4AA00B52
VR102	EVNK4AA00B14
VR201, 202	QVKDM80RA24
VR203, 204	EVNK4AA00B54
VR401, 402	EVNK4AA00B54
VR403	EVNK4AA00B24

CAPACITORS

Ref. No.	Part No.
C1, 2	ECKD1H471KB
C3, 4	ECKD1H221KB
C5, 6	ECEA16M10R
C7, 8	ECEA1CS330
C9, 10	ECKD1H102KB
C13, 14	ECEA1CS330
C15, 16	ECEA1HS100
C17, 18	ECQM1H273JZ
C19, 20	ECQM1H123JZ
C21, 22	ECEA1ES470
C23	ECEA1CS331
C24	ECEA1HS100
C25, 26	ECEA1AS221
C27, 28	ECEA50MR33R
C29, 30	ECQP1471JZ
C31, 32	ECQM1H273JZ
C33, 34	ECKD1H152KB
C35, 36	ECEA1HS100
C37, 37	ECQM1H472JZ
C39, 40	ECEA1HS100
C41, 42	ECQM1H562JZ
C45, 46	ECQM1H473KZ
C47, 48	ECEA1HS100
C49, 50	ECQV05104JZ
C51, 52	ECEA50ZR33
C53, 54	ECEA2AS3R3
C55	ECEA1ES221
C57, 58	ECEA2AS3R3
C59, 60	ECEA2AS010
C61, 62	ECEA1HS100
C63, 64	ECEA1CS221
C65	ECEA1ES101
C101, 102	ECEA50ZR22
C103, 104	ECEA2AS3R3
C105	ECQM1H473KZ
C106	ECQV05104JZ
C107	ECEA1JS4R7
C108	ECEA1HS100
C201, 202	ECEA16M10R
C203, 204	ECKD1H102KB
C205, 206	ECEA1CS330
C207, 208	ECCD1H470K
C209, 210, 211, 212	ECEA1HS100
C213	ECEA1ES470
C214	ECEA1CS331
C215, 216	ECEA1AS221
C217, 218	ECEA50MR33R
C221, 222	ECQM1H273JZ
C223, 224, 225, 226	ECEA1HS100
C227, 228	ECQM1H472JZ
C229, 230	ECQM1H562JZ
C233, 234	ECQM1H473KZ
C235, 236, 237, 238	ECEA1HS100
C239, 240	ECQV05104JZ
C241, 242	ECEA50ZR33
C243, 244	ECKD1H151KB
C245, 246	ECEA50ZR47
C247, 248	ECKD1H681KB
C249, 250	ECEA1CS330
C251, 252	ECEA1HS100
C253, 254	ECEA50ZR33
C255, 256	ECKD1H151KB
C257, 258	ECQM1H183JZ
C259, 260	ECQM1H822KZ
C263, 264	ECQM1H333JZ
C265, 266	ECQM1H273KZ
C267, 268	ECQM1H683KZ
C269, 270	ECQM1H273KZ
C271, 272	ECQM1H393KZ
C273, 274	ECQM1H273KZ
C275, 276	ECQM1H473KZ
C277	ECEA1ES471
C279, 280	ECKD1H152KB
C281, 282	ECEA1JS4R7
C283, 284	ECQP1471JZ
C401, 402	ECKD1H151KB
C403	ECQF4333KZH
C404, 405	ECEA1HS100
C406, 407	ECQM1H822KZ
C408	ECQM1H472KZ
C409	ECEA2AS2R2
C410	ECEA1HS100
C412, 413	ECEA1HS470
C414	ECEA1HS100
C415	ECEA1JS4R7
C416	ECEA1VS221
C417	ECEA2AS2R2
C418	ECQM1H183KZ
C501	ECEA1VS102
C502	ECKD1H103P
C503 ⚠	ECEA1ES221
C504 ⚠	ECEA1ES331
C505 ⚠	ECKD1H103P
C506 ⚠	ECEA1VS102
C507 ⚠	ECEA1ES222
C508	ECKD1H103P

DIODES & RECTIFIERS

Ref. No.	Part No.
D1, 2	MA161
D101, 102	MA161
D103	MV121
D104	MA161
D201, 202	MA161
D401, 402, 403, 404, 405, 406, 407, 408	MA161
D409	RD22EB1
D501 ⚠	RD22EB1
D502, 503, 504, 505 ⚠	SM112
D601	LD001UR
D602	LD001GG
D603	LD001YY

TRANSISTORS

Ref. No.	Part No.
Q1, 2	2SC1844E
Q3, 4	2SC1327
Q5, 6, 7, 8, 9, 10	2SC945
Q11, 12	2SD592NCS
Q13, 14, 15, 16	2SC945
Q17, 18	2SA999E
Q101, 102, 103	2SC945
Q201, 202, 203, 204	2SC1327
Q205, 206	2SD592NCS
Q207, 208, 209, 210	2SC945
Q401, 402	2SC592NCS
Q403	2SD946
Q404, 405, 406, 407, 408	2SC945
Q409, 410, 411	2SA999E
Q501, 502	2SD794P

INTEGRATED CIRCUITS

Ref. No.	Part No.
IC1, 2, 3, 4	NE646B
IC5	AN6552
IC6	AN6870

COMBINATION PARTS

Ref. No.	Part No.
CR1, 2	EXRP681K472
CR3, 4	EXRP122K473
CR201, 202	EXRP681K472
CR203, 204, 205, 206	EXRP122K473
CR207, 208	EXRP222K222

Ref. No.	Part No.	Part Name & Description
		TRANSFORMER
T501 ⚠	QLPD51EME	AC Power Transformer
		COILS
L1, 2	QLQX1032W	Bias Trap Coil (for Playback System)
L201, 202	QLM9Z6K	Multiplex Filter
L203, 204	QLQC2721K	Peaking Coil
L205, 206	QLQX1032W	Bias Trap Coil (for Recording System)
L301	QLB0158	Bias Oscillation Coil
		SWITCHES
S1, 2, 3	QSWY305	Push Switch (Dolby NR, Monitor Selector, Input Selector)
S4	QSR6402A	Rotary Switch (Tape Selector)
S5	EVQPAR11K	Push Switch (Rec-Mute)
S6	QSB0178	Leaf Switch (Record/Playback Selector)
S7, 8, 9	QSB0253M	Leaf Switch
S10 ⚠	RSH1B04ZAS	Push Switch (Power ON/OFF)
S11 ⚠	QSR1407H	Rotary Switch (AC Power Voltage Selector)
		JACKS
J1	QJA0257H	Microphone Jack
J2	QJA0255H	Headphones Jack
J3	QEJ5002H	Jack Board Assembly
		FUSES
F1 ⚠	XBAQ0009	Fuse (T 800mA)
F2 ⚠	XBAQ0003	Fuse (T 500mA)
F3 ⚠	XBAQ0006	Fuse (T 315mA)

evel controls ··· MAX
t level control ··· MAX

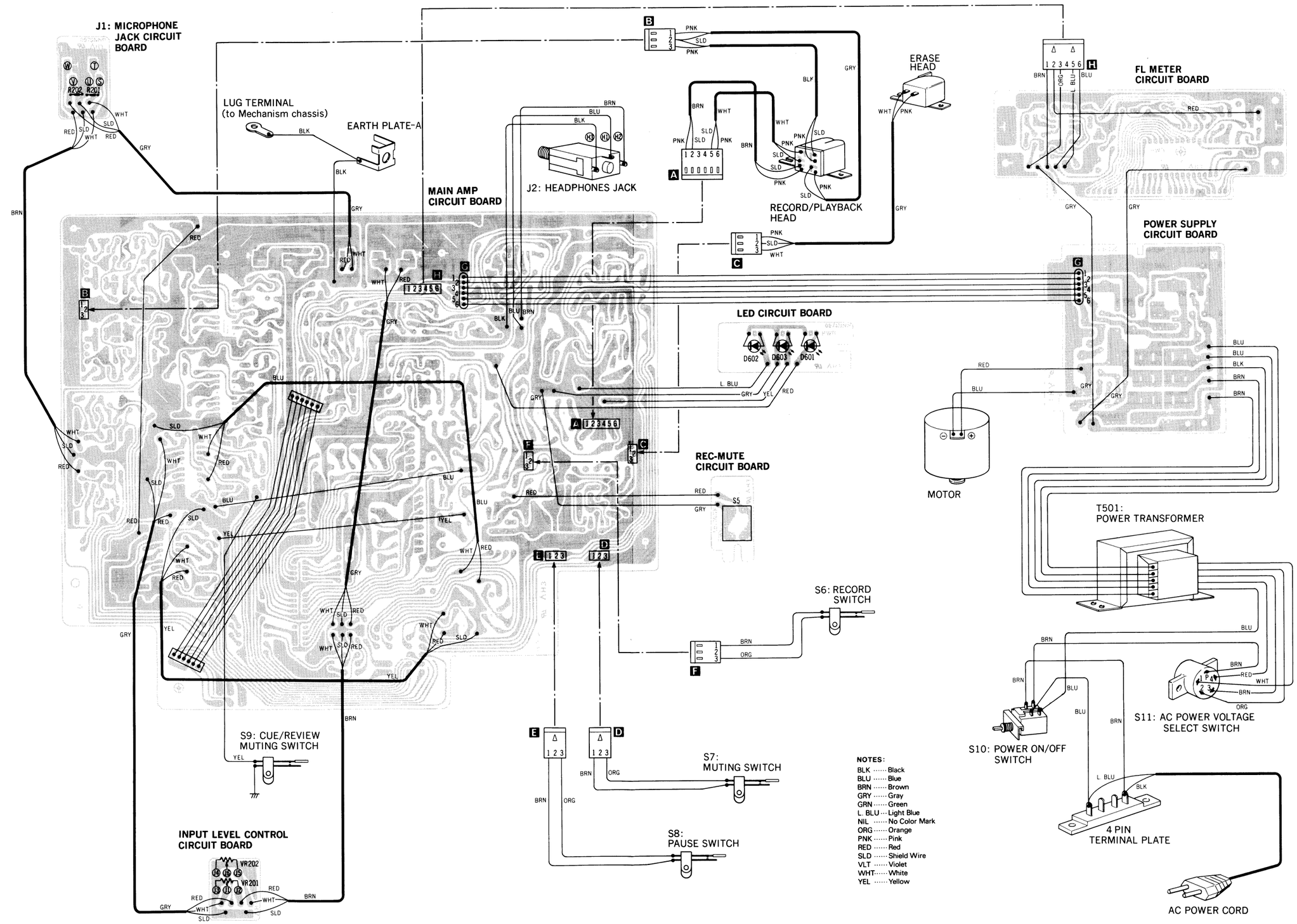
More than 47dB (without NAB filter)
Less than 2.3% (Normal)
Less than 3.3% e-Cr, CrO_2 and Metal)
More than 45dB (without NAB filter)

CAPACITORS
ECG□ ····· Ceramic
ECK□ ····· Ceramic
ECC□ ····· Ceramic
ECF□ ····· Ceramic
ECQM ····· Polyester film
ECQE ····· Polyester film
ECQF ····· Polypropylene
ECE□ ····· Electrolytic
ECE□N ··· Non polar electrolytic
ECQS ····· Polystyrene
ECS□ ····· Tantalum
QCS ····· Tantalum

NOTE: ⚠ indicates that only parts specified by the manufacturer be used for safety.

RS-M260

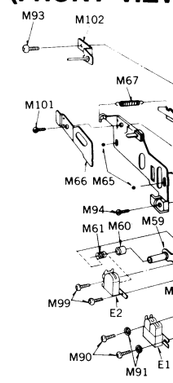
WIRING CONNECTION DIAGRAM



NOTES:

BLK ..... Black
BLU ..... Blue
BRN ..... Brown
GRY ..... Gray
GRN ..... Green
L. BLU ... Light Blue
NIL ..... No Color Mark
ORG ..... Orange
PNK ..... Pink
RED ..... Red
SLD ..... Shield Wire
VLT ..... Violet
WHT ..... White
YEL ..... Yellow

MECHA
(FRONT VIEW



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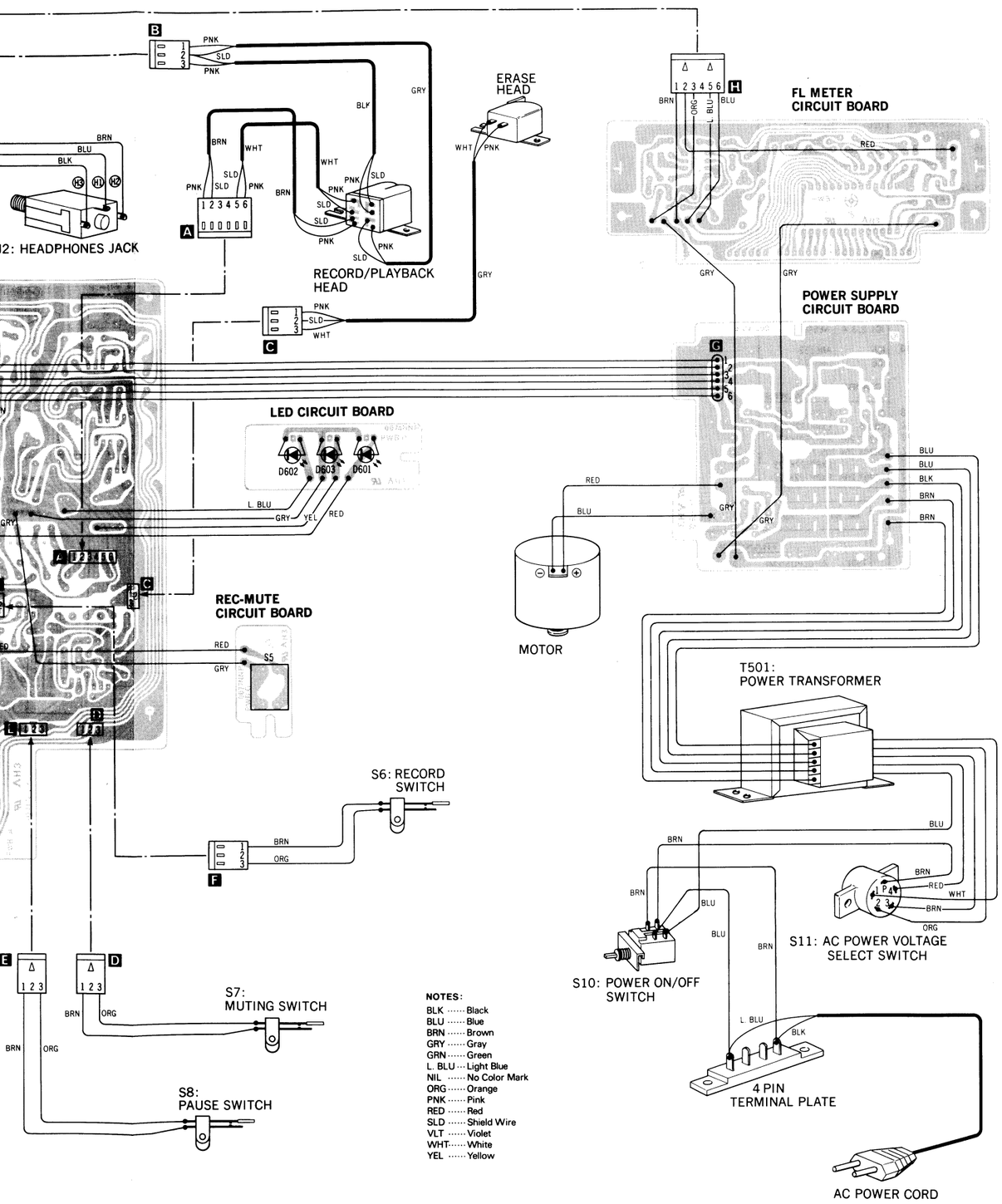
ins
RS

Ref. No.	Part
	ME
M1	QBP187
M2	QDG120
M3	QDG120
M4	QMB133
M5	QDR113
M6	QMF211
M7	QML358
M8	QML358
M9	QML358
M10	QML358
M11	QML359
M12	QML360
M13	QML360
M14	QML360
M15	QML359
M16	QMR182
M17	QMR182
M18	QMR182
M19	QMR182
M20	QMZ123
M21	QBC135
M22	QBT168
M23	QBT189
M24	QBN173



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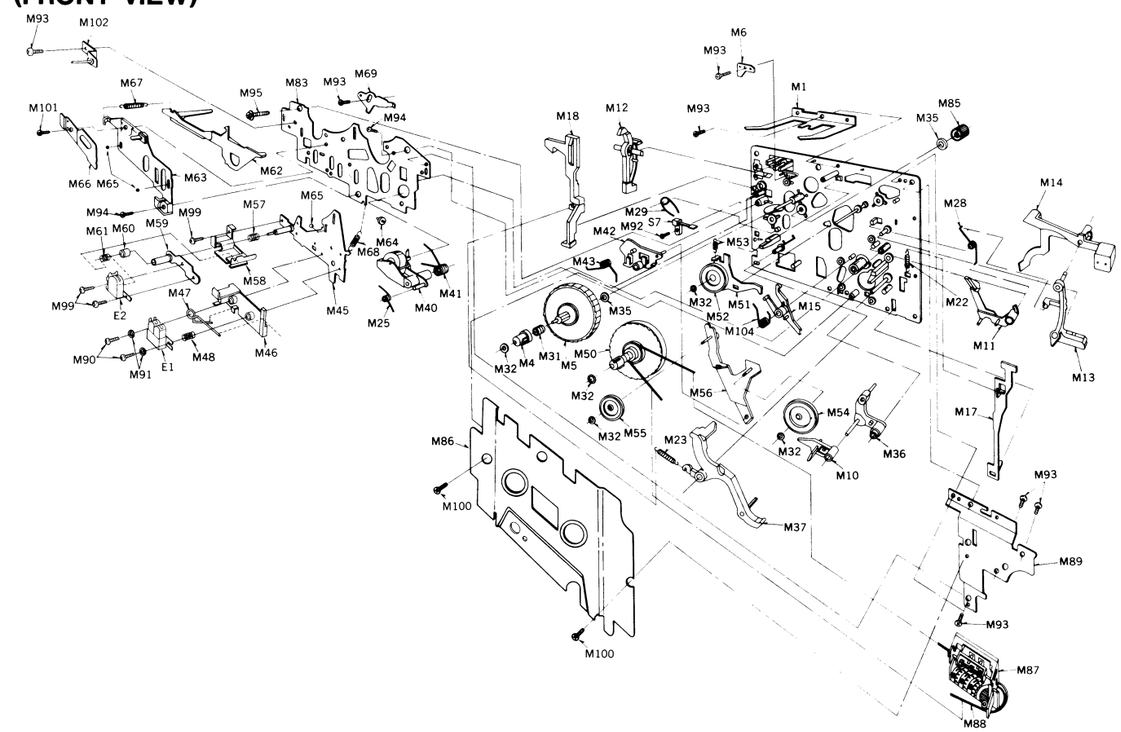
YEL ..... Yellow

MECHANICAL PARTS LOCATION

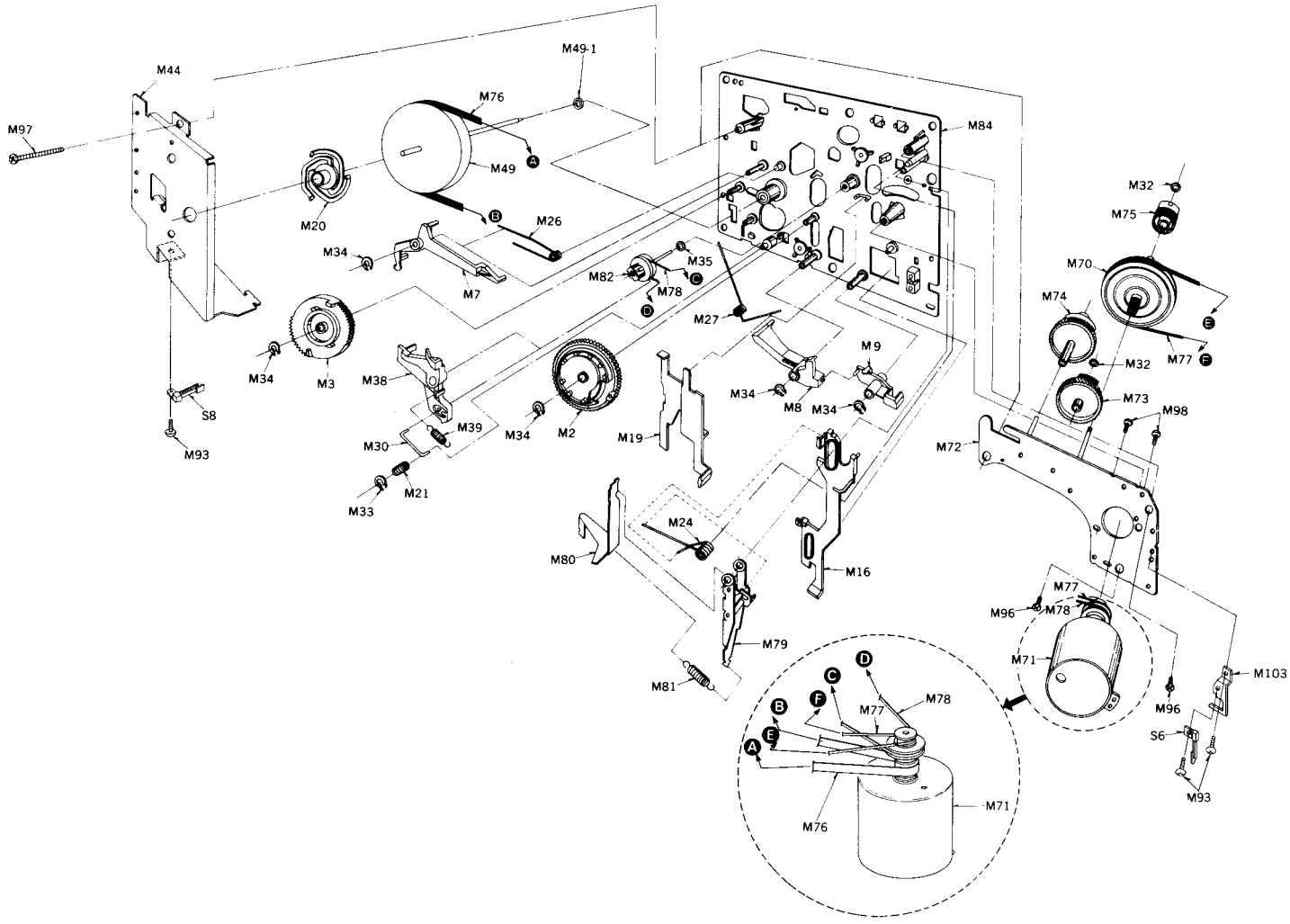
(FRONT VIEW)



When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

Ref. No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M1	QBP1874	Cassette Pressure Spring
M2	QDG1201	Main Gear
M3	QDG1202	Sub Gear
M4	QMB1336	Supply Reel Table Hub
M5	QDR1139	Supply Reel Table
M6	QMF2118	Fast Forward Arm Bracket
M7	QML3581	Sub Control Lever
M8	QML3583	Main Control Lever
M9	QML3584	Record Operation Lever
M10	QML3586	Head Base Plate Lift Lever
M11	QML3594	Auto-Stop Release Arm
M12	QML3603	Erase Safety Lever
M13	QML3604	Auto-Stop Driving Lever
M14	QML3605	Auto-Stop Detection Lever
M15	QML3592	Change Lever
M16	QMR1820	Record Rod
M17	QMR1821	Auto-Stop Connection Rod
M18	QMR1822	Eject Rod
M19	QMR1824	Control Rod
M20	QMZ1239	Flywheel Thrust Retainer
M21	QBC1357	Lock Pin Pressure Spring
M22	QBT1682	Auto-Stop Connection Rod Spring
M23	QBT1894	Main Lever Spring
M24	QBN1739	Selection Lever Spring
M25	QBN1742	Pressure Roller Release Spring
M26	QBN1744	Sub Gear Spring
M27	QBN1802	Main Gear Spring
M28	QBN1746	Auto-Stop Lever Spring
M29	QBN1747	Connection Spring
M30	QBS1128	Lock Pin
M31	QBC1372	Reel Table Spring
M32	QBW2008	Poly Washer 2φ
M33	XUB4FT	Stop Ring 4φ
M34	XUB3FT	Stop Ring 3φ
M35	QBW2012	Poly Washer
M36	QXL1354	Sub Lever Assembly
M37	QXL1355	Main Lever Assembly
M38	QML3582	Pause Lock Lever
M39	QBT1896	Lever Release Spring
M40	QXL1381	Pressure Roller Assembly
M41	QBN1743	Pressure Roller Spring
M42	QML3588	Fast Forward Lever
M43	QBN1748	Fast Forward Spring
M44	QMA3861	Plunger Angle
M45	QXK2388	Head Base Plate Assembly
M46	QMZ1258	Head Spacer
M47	QBN1740	Head Pressure Spring
M48	QBCA0008	Head Spring
M49	QXF0164	Flywheel Assembly
M49-1	QBW2049	Poly Washer
M49-2	QBW2026	Washer
M50	QXD1143	Takeup Reel Table Assembly
M51	QXL1382	Idler Lever Assembly
M52	QXI0111	Takeup Idler Assembly
M53	QBT1893	Takeup Idler Spring
M54	QXI0113	Fast Forward Idler Assembly
M55	QXI0112	Rewind Idler Assembly
M56	QXL1383	Fast Forward Arm Assembly
M57	QBC1343	Head Spring
M58	QTD1292	Cord Clamper
M59	QXA1084	Erase Head Base Plate Assembly
M60	QNQ1094	Nut (Erase Head Adjustment)
M61	QBN1788	Back Tension Spring
M62	QML3591	Brake Arm
M63	QMZ1240	Sub Head Base Plate
M64	QMN2550	Roller
M65	QDK1017	Steel Ball 2φ
M66	QBP1873	Head Base Plate Pressure Spring
M67	QBT1597	Brake Arm Spring
M68	QBT1892	Head Release Spring
M69	QMA3858	Pressure Roller Adjustment Plate
M70	QXG1047	Takeup Gear Assembly
M71	QXU0170	Motor Assembly
M72	QXK2286	Sub Chassis Assembly

(REAR VIEW)



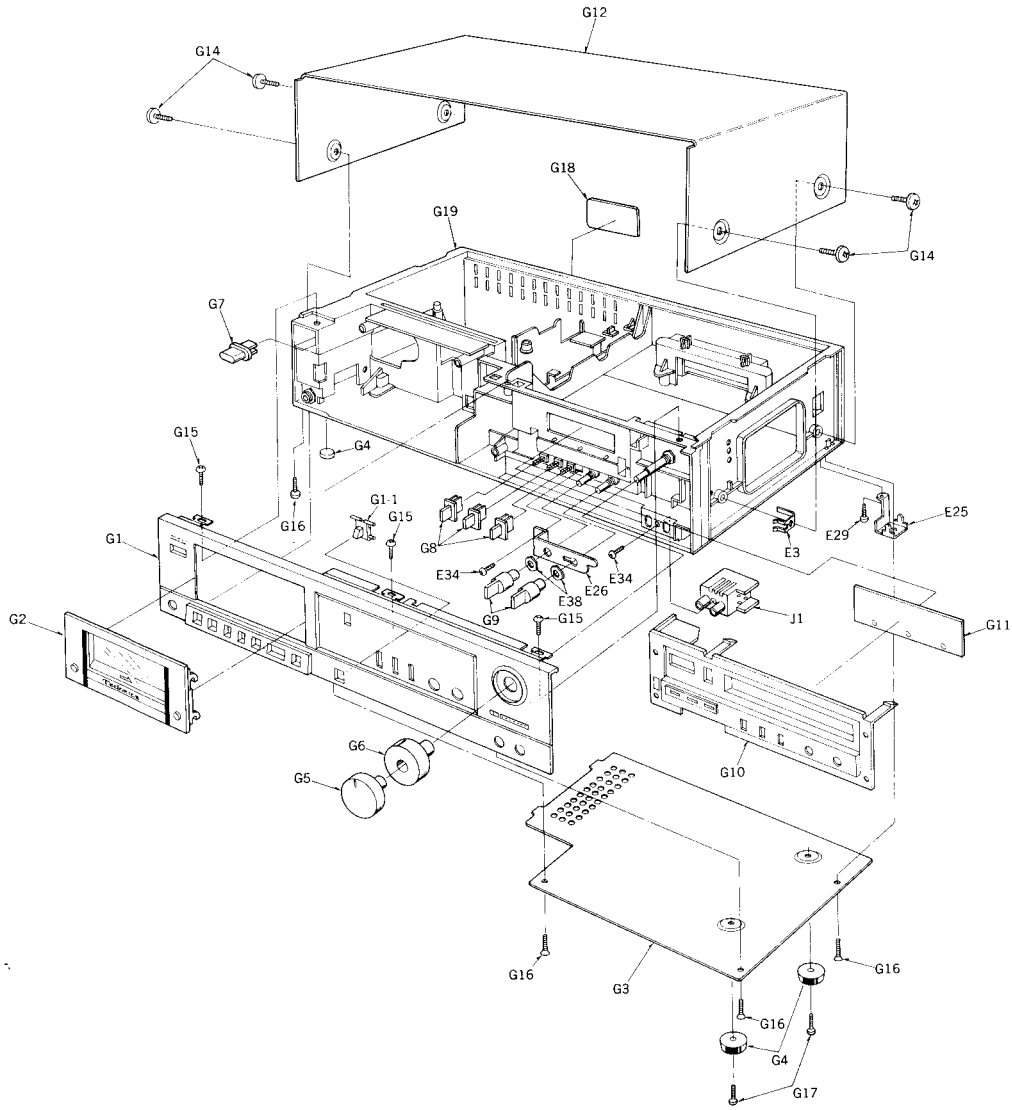
Ref. No.	Part No.	Part Name & Description
M73	QDG1199	Auto-Stop Gear
M74	QDG1200	Cam Gear
M75	QDP1823	Connection Pulley
M76	QDB0281	Capstan Belt
M77	QDB0274	Takeup Belt
M78	QDB0273	Fast Forward Belt
M79	QXL1360	Record/Playback Selection Arm Assembly
M80	QML3580	Record/Playback Selection Lever
M81	QBT1895	Record/Playback Selection Lever Spring
M82	QXP0607	Fast Forward Connection Pulley Assembly
M83	QMK1838	Upper Base Plate
M85	QDP1828	Fast Forward Pulley
M86	QXH0347	Chassis Cover Assembly
M87	QXC0060	Tape Counter
M88	QDB0240	Counter Belt
M89	QMA3860	Counter Angle
M90	XSN2+10	Screw ⊕2×10
M91	XWG2	Washer 2φ
M92	XTN2+6B	Tapping Screw ⊕2×6
M93	XTN26+6B	Tapping Screw ⊕2.6×6
M94	XTN26+10B	Tapping Screw ⊕2.6×10
M95	XTN26+12B	Tapping Screw ⊕2.6×12
M96	XTN3+10B	Tapping Screw ⊕3×10

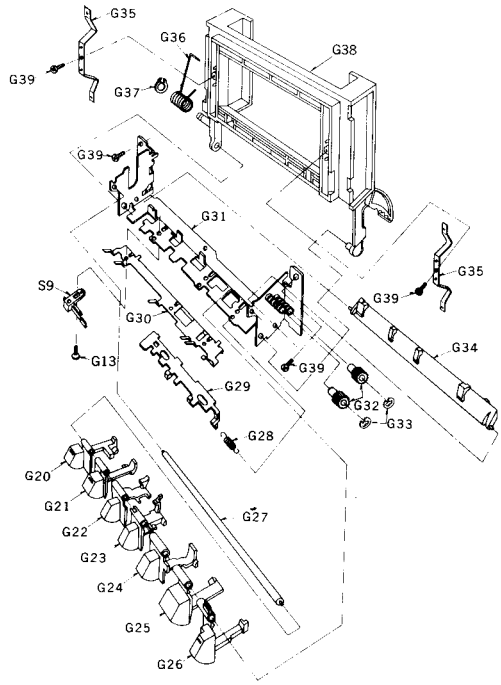
Ref. No.	Part No.	Part Name & Description
M97	XTN3+24B	Tapping Screw ⊕3×24
M98	XSN26+3	Screw ⊕2.6×3
M99	XSN2+3	Screw ⊕2×3
M100	XTN26+6BFZ	Tapping Screw ⊕2.6×6
M101	XTS26+6B	Tapping Screw ⊕2.6×6
M102	QXA1086	Sub Angle Assembly
M103	QMA4011	Switch Angle
M104	QBN1741	Change Lever Spring

SPECIFICATIONS

Pressure of pressure roller	350±50g
Takeup tension * Use cassette torque meter ···QZZSRKCT	45^{+15}_{-10} g-cm
Wow and flutter; (JIS) * Use test tape ···QZZCWAT	Less than 0.06% (WRMS)

CABINET PARTS LOCATION





Ref. No.	Part No.	Part Name & Description
	CABINET PARTS	
G1	QYPM0042 "Silver Type"	Front Panel Assembly
	QYPM0042K "Black Type"	"
G1-1	QGOM0037	Rec-Mute Button
G2	QYFM0047 "Silver Type"	Cassette Lid Assembly
	QYFM0047K "Black Type"	"
G3	QGCM0036	Bottom Cover
G4	QKA1083	Rubber Foot
G5	QYT0586 "Silver Type"	Volume Knob-A Assembly
	QYT0586K "Black Type"	"
G6	QYT0587 "Silver Type"	Volume Knob-B Assembly
	QYT0587K "Black Type"	"
G7	QGO1692N "Silver Type"	Push Button (Power ON/OFF)
	QGO1692K "Black Type"	"
G8	QGO1694N "Silver Type"	Push Button (Monitor/Dolby NR/ Input Select)
	QGO1694K "Black Type"	"
G9	QGT1515 "Silver Type"	Control Knob (Tape Select/Output Level)
	QGT1515K "Black Type"	"
G10	QYKM0008 "Silver Type"	Meter Cover
	QYKM0008K "Black Type"	"
G11	QKJM0045 "Silver Type"	Meter Filter
	QKJM0045Y "Black Type"	"
G12	QGC1182 "Silver Type"	Case Cover
	QGC1182K "Black Type"	"
G13	XTN2+6B	Tapping Screw ⊕2×6
G14	XTB4+10BFN "Silver Type"	Tapping Screw ⊕4×10
	XTB4+10BFZ "Black Type"	"
G15	XTS3+10B	Tapping Screw ⊕3×10
G16	XTN3+10B	"
G17	QHQ1299	Step Screw
G18	[D] QGSM0125	Main Name Plate
※For all European areas except United Kingdom.		
	[B] QGSM0126	"
※For United Kingdom.		
G19	QKMM0032K	Main Case
G20	QXL1363	Eject Button Assembly
G21	QXL1364	Record Button Assembly
G22	QXL1365	Rewind/Review Button Assembly
G23	QXL1366	Fast Forward/Cue Button Assembly
G24	QXL1367	Playback Button Assembly
G25	QXL1368	Stop Button Assembly
G26	QXL1369	Pause Button Assembly
G27	QMN2554	Operation Lever Shaft
G28	QBT1597	Obstruction Rod Spring
G29	QMR1823	Obstruction Rod
G30	QBP1875	Operation Lever Spring
G31	QXA1044	Operation Button Angle Assembly
G32	QDG1102	Holder Gear
G33	QBW2082	Snap Ring
G34	QML3593	Lock Arm
G35	QBP1900	Holder Spring
G36	QBN7008	Eject Spring
G37	XUB5FT	Stop Ring 5φ
G38	QKFM6005K	Cassette Holder
G39	XTN26+6B	Tapping Screw ⊕2.6×6
	ACCESSORIES	
A1	RP023A	Connection Cord
A2	[D] QQT2874	Instruction Book
※For all European areas except United Kingdom.		
	[B] QQT2875	"
※For United Kingdom.		
	PACKINGS	
P1	QPNM0154	Inside Carton
P2	QPAM0042	Cushion-R
P3	QPAM0043	Cushion-L
P4	XZB40X60A02	Poly Bag
P5	QPG1985	Pad

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RS-M260 FRANCAIS

MESURES ET REGLAGES

NOTA: Pour garder l'appareil en bon état de marche, positionner les commuteurs à levier et les commandes dans les positions suivantes, sauf indication contraire.

- Vérifiez que les têtes soiènt propres.
- Vérifiez que le cabestan et le galet-pressure soient propres.
- Température ambiante admissible: 20±5°C.
- Sélecteur de bande: Normal
- Commutateur de contrôle: Position bande
- Commande de niveau: MAX
- Commande de niveau de sortie: MAX
- Sélecteur de Dolby: OUT
- Commutateur de test de crête: LINE

SECTION	MESURES ET REGLAGES
Ⓐ Réglage de la position de la tête Condition: * Le mode de lecture et pause	Il y a une plaque de réglage de la tête pour ajuster le contact de bande de la tête en mode de repérage avant ou arrière. 1. Appuyer sur le bouton de lecture (PLAY) et le bouton de pause. 2. Mesurer l'espace qui sépare le galet presseur du cabestan. **Valeur normale: 0.5±0.3mm** 3. Si la valeur mesurée se trouve hors tolérances, desserrer la vis A, et glisser la plaque de réglage de la tête dans la direction de la flèche Ⓑ pour effectuer le réglage (Voir Fig. 2).
Ⓑ Azimutage de tête Condition: * Position lecture Equipement: * Voltmètre électronique * Oscilloscope * Bande étalon (azimutage)...QZZCFM * Bande étalon (Fenêtre de passagede la band avec mirroir) ...QZZCRD	**Réglage de la tête multiple** 1. Branchez les appareils comme ci-dessous. (Voir Fig. 3). 2. Lisez la bande étalon d'azimutage (QZZCFM, 8kHz). 3. Réglez la vis d'orientation (B) Fig. 4, de la tête d'enregistrement/lecture pour obtenir le niveau maximal à la sortie LINE OUT. 4. Mesurez les deux canaux, et ajustez les niveaux à égalite de tension de sortie. 5. Après réglage, bloquez la vis par une goutte de vernis.
Ⓒ Réglage de la hauteur de la tête d'effacement Condition: * Position lecture Equipement: * Bande étalon (Fenêtre de passagede la band avec mirroir) ...QZZCRD	1. Retirer les vis (D) et (E) pour remplacer la tête de lecture. (L'écrou (C) étant conçu pour le réglage de la hauteur de la tête d'effacement pour maintenir la performance, ne pas le retirer.) 2. Après avoir remplacé la tête d'effacement, procéder à la vérification du bon déroulement de la bande en écoutant la bande d'essai QZZCRD. Pour tout problème de déroulement de la bande, régler selon la procédure ci-dessous. **Réglage** 1. Ajuster l'écrou (C) montré à la fig. 5 de sorte que la bande passe correctement sur le guide de la tête d'effacement. 2. Le réglage terminé, bloquer l'écrou (C) avec du vernis.
Ⓓ Vitesse de défilement Condition: * Position lecture Equipement: * Compteur électronique numérique ou fréquencemètre numérique * Bande étalon...QZZCWAT	**Précision de la vitesse de défilement** 1. Branchez les appareils comme ci-dessous. (Voir fig. 6). 2. Lisez la bande étalon (QZZCWAT, 3000Hz) et appliquez le signal de sortie au fréquencemètre. 3. Mesurez sa fréquence. 4. Sur la base de 3000Hz, déteminez la valeur à l'aide de la formule. $\text{Précision de vitesse} = \frac{f-3000}{3000} \times 100(\%)$ avec f = valeur mesurée. 5. Effectuez la mesure sur la partie médiane de la bande. **Valeur normale: ±1.5%** **Méthode de réglage** 1. Lisez la bande étalon (milieu). 2,3. Ajustez la vis de réglage de vitesse VR indiquée fig. 1 pour que la fréquence devienne égale à 3000Hz. **Nota:** Utiliser un tournevis non métallique pour régler la vitesse de bande de cet appareil avec précision. **Eluctuations de vitesse de défilement** Faites les mesures de la même facon que ci-dessus (au début, au milieu et en fin de bande) et déterminez la différence entre les valeurs maximale et minimale, puis calculez comme suit.

SECTION	MESURES ET REGLAGES
	$\text{Fluctuations de vitesse} = \frac{f_1 - f_2}{3000} \times 100(\%)$ f_1 = valeur maximale f_2 = valeur minimale **Valeur normale: monis de 1%**
Ⓔ Réponse en fréquence à la lecture Condition: * Position lecture * Sélecteur de bande ...position Normal * Commande de niveau de sortie...MAX. Equipement: * Voltmètre électronique * Oscilloscope * Bande étalon...QZZCFM	1. Branchez les appareils comme ci-dessous (Voir Fig. 3). 2. Placez l'appareil en position lecture. 3. Lisez la bande étalon de courbe de réponse (QZZCFM). 4. Mesurez les niveaux de sortie à 315Hz, 12.5kHz, 8kHz, 250Hz, 125Hz et 63Hz et comparez chaque niveau de sortie avec celui de la fréquence étalon de 315Hz, sur la borne LINE OUT. 5. Effectuez la mesure sur les deux canaux. 6. Vérifiez que les valeurs mesurées se situent à l'intérieur du gabarit de courbe de réponse. (Vori Fig. 7). **Réglage** 1. Si la valeur mesurée se trouve hors tolérances dans la gamme des fréquences élevées, les points de connexion PCB (a) (canal gauche) et (a') (canal droit) doivent être court-circuités. Dans ce cas, les points de connexion (b) (canal gauche) et (b') (canal droit) doivent être ouverts. 2. Procéder aux mêmes mesures données aux étapes 2 à 6 de la section "Mesure" ci-dessus. 3. Si la valeur mesurée diminue dans la gamme des hautes fréquences, comme montré dans la Fig. 8, les points de connexion (b) (canal gauche) et (b') (canal droit) de la plaquette à câblage imprimé devraient être courtcircuités (Voir Fig. 12). Valeur de compensation 4kHz: Autour de +0.3dB; 6kHz: Autour de +0.5dB; 8kHz: Autour de +0.7dB; 10kHz: Autour de +0.7dB; 12.5kHz: Autour de +0.6dB 4. Si la valeur mesurée augmente dans la gamme des fréquences élevées, voir figure 9, les points de connexion (a) (canal gauche) et (a') (canal droit) doivent être ouverts. Les points de connexion (b) (canal gauche) et (b') (canal droit) doivent être court-circuités. 4kHz: Autour de 0dB; 6kHz: Autour de −0.3dB; 8kHz: Autour de −0.4dB; 10kHz: Autour de −0.5dB; 12.5kHz: Autour de −0.9dB 5. Si la valeur mesurée diminue à la gamme des moyennes fréquences, comme montré à la Fig. 10, les points de branchement (c) et (c') de la plaquette à câblage imprimé doivent être ouverts (Voir Fig. 12). Valeur de compensation 700Hz: Autour de +0.2dB; 1kHz: Autour de +0.4dB; 2kHz: Autour de +0.7dB; 4kHz: Autour de +0.9dB; 10kHz: Autour de +1.2dB 6. Si la valeur mesurée augmente à la gamme des moyennes fréquences, comme montré à la Fig. 11, les points de branchement (c) et (c') doivent être court-circuités (Voir Fig. 12). Valeur de compensation 700Hz: Autour de −0.2dB; 1kHz: Autour de −0.4dB; 2kHz: Autour de −0.7dB; 4kHz: Autour de −0.9dB; 10kHz: Autour de −0.9dB
Ⓕ Gain à la lecture Condition: * Position lecture * Sélecteur de bande ...position Normal * Commande de niveau de sortie...MAX. Equipement: * Voltmètre électronique * Oscilloscope * Bande étalon...QZZCFM	1. Branchez les appareils comme ci-dessous (Voir Fig. 3). 2. Lisez la partie "niveau standard" de la bande étalon (QZZCFM, 315Hz) et mesurez le niveau de sortie, avec le voltmètre électronique, sur le jack LINE OUT. 3. Effectuez les mesures sur les deux canaux. **Valeur normale: Autour de 0.7V** **Réglage** 1. Si la valeur mesurée n'est pas correct, réglez VR1 (canal gauche) et VR2 (canal droit) (Voir Fig. 1). 2. Après réglage, vérifiez à nouveau la "Ⓔ réponse en fréquence à la lecture".

SECTION	MESURES ET REG
Ⓖ Fultes de Prémagnétisation Condition: * Position enregistrement * Sélecteur de bande ...position Normal Equipement: * Voltmètre électronique * Oscilloscope	**Réglage (Pour l'amplificateur d'enregis** 1. Branchez les appareils comme ci-de 2. Placez l'appareil en position enregi 3. Réglez les bobines de la trappe L20 (canal droit) pour que la mesure soi **Réglage (Pour l'amplificateur de reproc** 1. Branchez les appareils comme ci-de 2. Placer l'appareil en mode d'enregis teur de contrôle sonore à la positio 3. Régler les bobines bouchon L1 (can droit) de façon à minimiser les vale LINE-OUT.
Ⓗ Courant d'effacement Condition: * Position enregistrement * Sélecteur de bande ...position Metal Equipement: * Voltmètre électronique * Oscilloscope	1. Branchez les appareils comme ci-de 2. Placer l'appareil en mode d'enregis sion au point d'essai 9. 3. Déteminer le courant d'effacement Courant d'effacement (A) = Tension aux bornes de la r / 1 (Ω) **Valeur normale: 100 +20 −5 mA** 4. Si la valeur lue se trouve hors toléra
Ⓘ Courant de prémagnétisation Condition: * Position enregistrement * Sélecteur de bande ...position Normal ...position Fe-Cr ...position CrO_2 ...position Metal * Command de niveau de sortie...MAX. Equipement: * Voltmètre èlectronique * Oscilloscope	1. Branchez les appareils selon la Fig 2. Placez l'appareil en position enregi bande sur "normal" (pour bande no 3. Lisez la tension sur le voltmètre éle courant de prémagnétisation selon Courant de prémagnétisation (= Tension lue sur voltm. éle / 10 (Ω) **Valeur normale: 0.7±0.3mA (** 4. Réglez VR402 (canal gauche) et VR 5. Positionner le sélecteur de bande s 6. Vérifiez si la valeur mesurée corres **0.75±0.3mA (p** **Valeur normale: 1.0±0.3mA (pc** **1.6±0.3mA (pc**
Ⓙ Gain global Condition: * Positions enregistrement/lecture * Sélecteur de bande ...position Normal ...position Fe-Cr ...position CrO_2 ...position Metal * Commande de niveau ...MAX. * Commande de niveau de sortie...MAX. * Niveaux d'entrée normaux MIC .....−72±3dB LINE IN .....−24±3dB Equipement: * Voltmètre électroniqur * Générateur AF * Atténuateur * Oscilloscope. * Bande étalon vierge ...QZZCRA pour type de bande normale ...QZZCRY pour Fe-Cr ...QZZCRX pour CrO_2 ...QZZCRZ pour Metal	1. Branchez les appareils comme sur l 2. Mettre la cassette d'essai (QZZCRA de la cassette. 3. Positionner l'appareil en mode d'en teur de bande sur chaque position. 4. Appliquer un signal de 1kHz (−24dB branché à l'ATT, à l'entrée LINE IN. 5. Régler le ATT de telle façon à ce qu fiche "LINE OUT" devienne 0.7V. 6. Placez l'appareil en position enregis 7. Effectuer la lecture d'une cassette niveau de sortie à LINE OUT sur le tubes. **Valeur normal: Autour de 0.7V±** 8. Si la valeur lue se trouve hors toléra gauche), VR204 (canal droit). 9. Recommencez à partir du palier (4). 10. Passer sur chaque position du sélec 11. Changer la bande d'essai sur Fe-Cr ou Metal (QZZCRZ). 12. Placez l'appareil en position enregis 13. Effectuer la lecture d'une cassette niveau de sortie à LINE OUT sur le tubes. **Valeur normal: 0.7V±1.5dB**

	MESURES ET REGLAGES
nt e	**Réglage (Pour l'amplificateur d'enregistrement)** 1. Branchez les appareils comme ci-dessous (voir Fig. 13). 2. Placez l'appareil en position enregistrement. 3. Réglez les bobines de la trappe L205 (canal gauche) et L206 (canal droit) pour que la mesure soit au minimum. (Voir Fig. 1). **Réglage (Pour l'amplificateur de reproduction)** 1. Branchez les appareils comme ci-dessous (Voir Fig. 14). 2. Placer l'appareil en mode d'enregistrement et amener le sélecteur de contrôle sonore à la position TAPE. 3. Régler les bobines bouchon L1 (canal gauche) et L2 (canal droit) de façon à minimiser les valeurs mesurées à la sortie de LINE-OUT.
nt nt e	1. Branchez les appareils comme ci-dessous (Voir Fig. 15). 2. Placer l'appareil en mode d'enregistrement et mesurer la tension au point d'essai 9. 3. Déteminer le courant d'effacement avec la formule suivante. Courant d'effacement (A) $= \frac{\text{Tension aux bornes de la résistance R403 (V)}}{1\ (\Omega)}$ **Valeur normale: 100^{+20}_{-5} mA (position Metal)** 4. Si la valeur lue se trouve hors tolérances, régler VR403.
nt	1. Branchez les appareils selon la Fig. 16. 2. Placez l'appareil en position enregistrement, le sélecteur de bande sur "normal" (pour bande normale). 3. Lisez la tension sur le voltmètre électronique et calculez le courant de prémagnétisation selon la formule. Courant de prémagnétisation (A) $= \frac{\text{Tension lue sur voltm. élec. (V)}}{10\ (\Omega)}$ **Valeur normale: 0.7±0.3mA (position Normal)** 4. Réglez VR402 (canal gauche) et VR401 (canal droit). 5. Positionner le sélecteur de bande sur chaque position. 6. Vérifiez si la valeur mesurée correspond a la norme. **0.75±0.3mA (position Fe-Cr)** **Valeur normale: 1.0±0.3mA (position CrO_2)** **1.6±0.3mA (position Metal)**
aux e de Cr 2 al	1. Branchez les appareils comme sur la Fig. 17. 2. Mettre la cassette d'essai (QZZCRA) en place dans le support de la cassette. 3. Positionner l'appareil en mode d'enregistrement, et le sélecteur de bande sur chaque position. 4. Appliquer un signal de 1kHz (−24dB) de l'oscillateur AF, branché à l'ATT, à l'entrée LINE IN. 5. Régler le ATT de telle façon à ce que le niveau de sortie à la fiche "LINE OUT" devienne 0.7V. 6. Placez l'appareil en position enregistrement. 7. Effectuer la lecture d'une cassette enregistree, et mesurer le niveau de sortie à LINE OUT sur le voltmètre électronique à tubes. **Valeur normal: Autour de 0.7V±1.5dB (position Normal)** 8. Si la valeur lue se trouve hors tolérances, régler VR203 (canal gauche), VR204 (canal droit). 9. Recommencez à partir du palier (4). 10. Passer sur chaque position du sélecteur de bande. 11. Changer la bande d'essai sur Fe-Cr (QZZCRY), CrO_2 (QZZCRX) ou Metal (QZZCRZ). 12. Placez l'appareil en position enregistrement. 13. Effectuer la lecture d'une cassette enregistree, et mesurer le niveau de sortie à LINE OUT sur le voltmètre électronique à tubes. **Valeur normal: 0.7V±1.5dB (position Fe-Cr / position CrO_2 / position Metal)**

SECTION	MESURES ET REGLAGES
	14. Si la valeur mesurée ne correspond pas à la norme, réglez de la manière suivante. 15. Réglez l'amplification globale en court-circuitant ou en ouvrant le point du circuit imprimé à la Fig. 18, de telle manière que chacune des positions arrive autour de sa valeur normative. 16. Se réferer au tableau suivant pour les valeurs des réglages des amplifications globales. Position Fe-Cr (CANAL GAUCHE) AMPLI-FICATION / POINT (d) / POINT (e) FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT Position Fe-Cr (CANAL DROIT) AMPLI-FICATION / POINT (d') / POINT (e') FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT Position CrO_2 (CANAL GAUCHE) AMPLI-FICATION / POINT (f) / POINT (g) FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT Position CrO_2 (CANAL DROIT) AMPLI-FICATION / POINT (f') / POINT (g') FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT Position Metal (CANAL GAUCHE) AMPLI-FICATION / POINT (h) / POINT (i) FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT Position Metal (CANAL DROIT) AMPLI-FICATION / POINT (h') / POINT (i') FAIBLE: FERME / FERME ↕: FERME / OUVERT ↕: OUVERT / FERME ELEVE: OUVERT / OUVERT
Ⓚ Courbe de réponse globale Condition: * Positions enregistrement/ lecture * Commande de niveau ...MAX. * Commande niveau de sortie...MAX. * Sélecteur de bande ...position Normal ...position Fe-Cr ...position CrO_2 ...position Metal Equipement: * Voltmètre électronique * Générature AF * Atténuateur * Resistance (600Ω) * Bande étalon vierge ...QZZCRA pour type normal ...QZZCRY pour Fe-Cr ...QZZCRX pour CrO_2 ...QZZCRZ pour Metal	**Nota 1:** Avant de mesurer et régler, vérifiez que la courbe de réponse en lecture est correct (pour la méthode de mesure, reportez-vous au paragraph considéré). **Nota 2:** La bande d'essai QZZCRA qui sera fournie après juillet 1980 a une sensibilité d'enregistrement plus élevée dans la gamme des moyennes et des hautes fréquences. * Ce diagramme indique les valeurs standard pour le nouveau type de QZZCRA lorsque utilisé. * Ce diagramme indique les valeurs standard pour l'ancien type de QZZCRA lorsque utilisé. Le nouveau type de QZZCRA est marqué comme montré sur la Fig. 20. **MESURE:** 1. Branchez les appareils de mesure comme surla Fig. 17. 2. Mettre la cassette d'essai (QZZCRA) en place dans le support de la cassette. 3. Placez l'appareil enposition enregistrement, le sélecteur de bande sur "Normal". 4. Appliquez un signal à 1kHz du générateur AF, à travers l'atténuateur, à l'entrée LINE IN. 5. Réglez l'atténuateur pour que le niveau d'entrée soit inférieur de −20dB au niveau étalon d'enregistrement. 6. A ce moment, le niveau sur LINE OUT est de 0.07V. 7. Enregistrez les frequences de 50Hz, 200Hz, 1kHz, 4kHz, 8kHz et 13kHz (15kHz pour bande Fe-Cr, CrO_2 Metal) á niveau constant. 8. Lisez cet enregistrement et exprimez en dB les différences entre le niveau de sortie de chaque fréquence et le niveau à 1kHz. 9. S'assurer que la valeur messurée se trouve dans la page spécifiée dans le diagramme de réponse en fréquences générals (Voir Fig. 19). 10. Changer la bande d'essai sur Fe-Cr (QZZCRY), CrO_2 (QZZCRX) ou Metal (QZZCRZ). 11. Positionner le sélecteur de bande sur chaque position. 12. Mesurer de la même maiére de l'étape 3 à l'étape 8. 13. S'assurer que la valeur mesurée se trouve dans la plage spécifiée dans le diagramme de la réponse en fréquences totale pour les bandes Fe-Cr, CrO_2 et Metal montré dans les figures 21.

SECTION	MESURES ET REGLAGES
	Réglage-1 Utilisation du courant de polarisation 1. Lorsque la courbe de réponse le gabarit entre le médium et l'aigu, comme indiqué par le trait plein de la Fig. 22, augmentez le courant de prémagnétisation en tournant les VR suivants: VR402 (canal gauche), VR401 (canal droit) 2. Lorsqu'elle est inférieure, come indiqué par la ligne en trait interrompu, réduisez le courant de prémagnétisation en tournant les VR suivants en sensinverse. VR402 (canal gauche), VR401 (canal droit) **Nota:** Pour la mesure du courant de prémagnétisation, reportez-vous au paragraphe correspondant en page 6. **Réglage 2—Utilisation des bobines de corection d'enregistrement** Lorsque la courbe de réponse est plate dans le médium et croit ou chute fortement dans l'aigu, comme indiqué par la Fig. 23, réqlez en tournant les bobines suivants de correction d'enregistrement avec les bandes normales. L203 (canal gauche), L204 (canal droit)
Ⓛ Indicateur de niveau Condition: * Position enregistrement * Commande de niveau ...MAX. * Commande de niveau de sortie...MAX. * Selecteur de band ...position Normal Equipement: * Voltmètre électronique * Générateur AF * Atténuateur	1. Branchez les appareils comme sur la Fig. 17. 2. Comme il est montré à la Fig. 24, le branchement de la base de Q102 à la terre arrête les oscillations du multivibrateur instable comprenant Q102 et Q103. 3. Alimenter d'un 1kHz (−24dB) a la fiche "LINE IN", puis pousser le bouton d'enregistrement. 4. Régler le ATT de telle façon à ce que le niveau de sortie à la fiche "LINE OUT" devienne 0.7V (Le niveau d'entreé à cette position est nommé le niveau d'entree standard). 5. Réglage au "−20dB). A. Réglez l'atténuateur pour que le niveau d'entrée soit inférieur de −20dB au niveau étalon d'enregistrement. B. Réglez VR101 de tel façon que le segment de −20dB s'allume dans la zone de −20dB±0.8dB. (canal droit seulement) (Voir Fig. 25). 6. Réglage au "0dB". A. Régler le ATT de telle façon à ce que le niveau de sortie à la fiche "LINE OUT" devienne 0.7V. B. Réglez VR102 de tel façon que le segment de +1dB s'allume dans la zone de 0±0.2dB du niveau d'entreé standard (Voir Fig. 26). 7. Répéter deux fois les étapes 5 à 6 ci-dessus. 8. Réglez l'ATT et vérifiez si tous les segments s'allument quand le niveau d'un signal d'entreé est augmenté de 10dB au dessus du niveau d'entreé standard (Voir Fig. 27).
Ⓜ Circuit Dolby Condition: * Position enregistrement * Commande de niveau LINE IN...MAX. * Commande de niveau de sortie...MAX. Equipement: * Voltmètre électronique * Générateur AF * Atténuateur * Oscilloscope * Resistance (600Ω)	1. Branchez les appareils comme sur la Fig. 28. 2. Placez l'appareil en position enregistrement et le sélecteur Dolby en position OUT, puis appliquez un signal à 5kHz à l'entrée LINE IN pour obtenir −34.5dB sur TP5 (canal gauche) et TP6 (canal droit). 3. Vérifiez que la valeur en position IN du sélecteur Dolby augmente de 8 (±2.5)dB par rapport à celle obtenue en position OUT.

RS-M260 DEUTSCH

Messungen und Einstellung

Anm.: Für gute Meßbedingungen sorgen. Falls nicht anders angegeben, die Schalter und Regler in folgende Positionen stellen.

- Für saubere Köpfe sorgen.
- Für saubere Tonwelle und Andruckrolle sorgen.
- Auf normale Raumtemperatur achten: 20±5°C.
- Band Schalter: Normal.
- Monitorschalter: Band-Position.
- Eingangsregler: MAX
- Ausgangsregler: MAX
- Dolby-Schalter: Aus
- Spitzenwertschalter: LINE

Gegenstand	Messung und Einstellung
Ⓐ Tonkopf-Positionierung Bedingung: * Wiedergabe und Pause	(Die Tonkopf-Positionierplatte dient zum Einstellen des Kontakts zwischen Tonkopf und Band während der Betriebszustände „Cue" und „ Review".) 1. Die Wiedergabetaste PLAY und die Pausetaste drücken. 2. Den Abstand zwischen der Andrucksrolle und der Tonwelle messen. **NORMALWERT: 0,5±0,3mm** 3. Falls der Meßwert außerhalb des Toleranzbereichs liegt, die Schraube (A) lösen und die Tonkopf-Positionierplatte in Pfeilrichtung Ⓑ schieben, um den Kopfkontakt einzustellen (Siehe Fig. 2).
Ⓑ Senkrechtstellen des Kopfes Bedingung: * Wiedergabe Meßgerät: * Röhrenvoltmeter * Oszillograf * Testband...QZZCFM * Testband (Bandlaufweg-Betrachtungsvorrichtung mit Spiegl)...QZZCRD	**Justage des Senkrechtstellen des kopfes** 1. Den Meßaufbau zeigt Fig. 3. 2. Testband (QZZCFM, 8kHz) wiedergeben. 3. Einstellschraube (B) (Fig. 4) auf maximale Ausgangsspannung einstellen. 4. Beide Kanäle überprüfen und auf gleiche Ausgangsspannung einstellen. 5. Nach dem Abgleich Einstellschraube mit Lach sichern.
Ⓒ Einstellung der Löschkopfhöhe Bedingung: * Wiedergabe Meßgerät: * Testband (Bandlaufweg-Betrachtungsvorrichtung mit Spiegl)...QZZCRD	1. Die Schrauben (D) und (E) lösen und den Löschkopf ersetzen. (Die Mutter (C) dient zur Einstellung der Löschkopfhöhe und darf nicht gelöst werden.) 2. Nachdem der Löschkopf ausgewechselt wurde, das Testband QZZCRD abspielen. Sollten irgendwelche Probleme beim Bandtransport auftreten, ist auf unten beschriebene Weise die Einstellung vorzunehmen. **Abgleich** 1. Die Mutter (C) (siehe Fig. 5) so justieren, daß das Band sich nicht verwickelt oder von der Bandführung des Löschkopfes verzogen wird. 2. Nach der Einstellung die Mutter (C) mit Lack sichern.
Ⓓ Bandgeschwindigkeit Bedingung: * Wiedergabe Meßgerät: * Elektronischer Digitalzähler * Testband...QZZCWAT	**Genauigkeit der Bandgeschwindigkeit** 1. Den Meßaufbau zeigt Fig. 6. 2. Testband (QZZCWAT 3000Hz) wiedergeben und Ausgangssignal dem Zähler zuführen. 3. Frequenz messen. 4. Beträgt die auf dem Testband aufgezeichnete Frequenz 3000Hz, so ergibt sich die Genauigkeit nach folgender Formal: Genauigkeit der Bandgeschwindigkeit = $\frac{f-3000}{3000}\times 100(\%)$ worin f die gemessene Frequenz ist. 5. Die Messung soll im mittleren Teil des Bandes erfolgern. **NORMALWERT: ±1,5%** **Einstellung:** 1. Den mittleren Teil des Testbandes wiedergeben. 2,3. Die Einstellschraube VR Vgl Fig. 1 so verstellen, daß eine Frequenz von 3000Hz angezeig wird. **Anm:** Verwenden Sie einen nichtmetallischen Schraubenzieher wenn Sie die Bandgeschwindigkeit justieren. **Schwankung der Bandgeschwindigkeit:** Messung, wie oben beschrieben für Anfang, mittleren Teil und Ende des Testbandes wiederholen und Schwankung wie folgt bestimmen:

Gegenstand	Messung und Einstellung
	Schwankung = $\frac{f_1-f_2}{3000}\times 100(\%)$ f_1 = Maximalwert f_2 = Minimalwert **NORMALWERT: Weniger als 1%**
Ⓔ Frequenzgang bei Wiedergabe Bedingung: * Wiedergabe * Band Schalter ...Normal position * Ausgangsregler: MAX. Meßgerät: * Röhrenvoltmeter * Oszillograf * Testband...QZZCFM	1. Den Meßaufbau zeigt Fig. 3. 2. Gerät auf "wiedergabe" schalten. 3. Frequenzgang-Testband QZZCFM wiedergeben. 4. Ausgangsspannungen bei 315kHz, 12,5kHz, 8kHz, 250Hz, 125Hz und 63Hz mit Ausgangsspannung der Standard Frequenz 315Hz vergleichen. 5. Messungen an beiden Kanälen durchführen. 6. Prüfen, ob die Werte innerhalb der in Fig. 7 dargestellten Kurven liegen. **Abgleich** 1. Sollte der Meßwert im hohen Frequenzbereich vom Sollwert abweichen, die Leiterplattenstellen (a) (linker Kanal) und (a') (rechter Kanal) kurzschließen (Fig. 12). Die Stellen (b) (linker Kanal) und (b') (rechter Kanal) sind dabei zu unterbrechen. 2. Die Messung wiederholen (Schritte 2 bis 6). 3. Falls bei hohen Frequenzen ein kleinerer Wert gemessen wird (siehe Fig. 8), müssen die Leiterplatten-Anschlußpunkte (b) (linker Kanal) und (b') (rechter Kanal) kurzgeschlossen werden (Siehe Fig. 12). Kompensationswert 4kHz: Ungefähr +0,3dB; 6kHz: Ungefähr +0,5dB; 8kHz: Ungefähr +0,7dB; 10kHz: Ungefähr +0,7dB; 12,5kHz: Ungefähr +0,6dB 4. Falls der Meßwert im hohen Frequenzbereich ansteigt (Fig. 9) die Leiterplattenstellen (a) (linker Kanal) und (a') (rechter Kanal) unterbrechen. Die Stellen (b) (linker Kanal) und (b') (rechter Kanal) müssen kurzgeschlossen werden. 4kHz: Ungefähr 0dB; 6kHz: Ungefähr −0,3dB; 8kHz: Ungefähr −0,3dB; 10kHz: Ungefähr −0,4dB; 12,5kHz: Ungefähr −0,7dB 5. Falls der Meßwert bei mittleren Frequenzen abfällt, sind die Stellen (c) und (c') auf der Leiterplatte zu unterbrechen. (Siehe Fig. 10, 12). Kompensationswert 700Hz: Ungefähr +0,2dB; 1kHz: Ungefähr +0,4dB; 2kHz: Ungefähr +0,7dB; 4kHz: Ungefähr +0,9dB; 10kHz: Ungefähr +0,9dB 6. Falls der Meßwert bei mittleren Frequenzen steigt, sind die Stellen (c) und (c') auf der Leiterplatte kurzzuschließen. (Siehe Fig. 11, 12). Kompensationswert 700Hz: Ungefähr −0,2dB; 1kHz: Ungefähr −0,4dB; 2kHz: Ungefähr −0,7dB; 4kHz: Ungefähr −0,9dB; 10kHz: Ungefähr −0,9dB
Ⓕ Wiedergabe-Verstärkung Bedingung: * Wiedergabe * Band Schalter ...Normal position * Ausgangsregler: MAX. Meßgerät: * Röhrenvoltmeter * Oszillograf * Testband...QZZCFM	1. Den Meßaufbau zeigt Fig. 3. 2. Standard-Frequenz (QZZCFM 315Hz) vom Testband wiedergeben und Ausgangsspannung messen. 3. Messung an beiden Kanälen durchführen. **NORMALWERT: Ungefähr 0,7V** **Einstellung:** 1. Abweichungen können durch Abgleich von VR1 (Linker Kanal) und VR2 (Rechter Kanal) (S. Fig. 1) korrigiert werden. 2. Nach effolgtem Abgleich ist der Frequenzgang bei Wiedergabe erneut zu kontrollieren.

Gegenstand	Messung und Ein
Ⓖ Störstrahlung der Vormagnetisierung Bedingung: * Aufnahme * Band Schalter ...Metal position Meßgerät: * Elekeronisches Voltmeter * Oszillograf	**Abgleich (zum Aufnahmeverstärker)** 1. Den Meßaufbau zeigt Fig. 13. 2. Gerät auf Aufnahme schalten. 3. Sperrkreisspulen L205 (Linker Kana so abgleichen daß der Meßwert mir **Abgleich (zum Wiedergabeverstärker)** 1. Den Meßaufbau zeight Fig. 14. 2. Auf Aufnahme schalten und den Me stellen. 3. Die Filterspulen L1 (linker Kanal) ur gleichen, daß an LINE OUT der klei
Ⓗ Löschstrom Bedingung: * Aufnahme * Betriebsart "Metalband" Meßgerät: * Röhrenvoltmeter * Oszillograf	1. Den Meßaufbau zeigt Fig. 15. 2. Gerät auf Aufnahme schalten und S ablesen. 3. Löschstrom nach folgender Formel Löschstrom (A) = Die Spannung über beide / 1 (Ω) **NORMALWERT: 100^{+20}_{-5}mA** 4. Abweichungen können durch Abgle werden.
Ⓘ Vormagnetisierung Bedingung: * Aufnahme * Band Schalter ...Normal position ...Fe-Cr position ...CrO_2 position ...Metal position Meßgerät: * Röhrenvoltmeter * Oszillograf	1. Den Meßaufbau zeigt Fig. 16. 2. Gerät auf "Aufnahme" und Bandwa schalten. 3. Spannung vom Röhrenvoltmeter ab rungsstrom nach folgender Formel Vormagnetisierungsstrom (A) = Spannung am Röhrenvoltm / 10 (Ω) **NORMALWERT: 0.7±0.3mA (** 4. VR402 (Linker Kanal) und VR401 (Re 5. Den Bandsortenwähler in jede Posi 6. Überprüfen, ob der Meßwert im vorg liegt. **0.75±0.3mA** **NORMALWERT: 1.0±0.3mA (** **1.6±0.3mA (**
Ⓙ Gesamt-Verstärkung Bedingung: * Band Schalter ...Normal position ...Fe-Cr position ...CrO_2 position ...Metal position * Eingangsregler...MAX. * Ausgangsregler...MAX. * Aufnahme und Wiedergabe * Standard-Eingangspegel Mikrofon .....−72±3dB NF-Eingang .....−24±3dB Meßgerät: * Röhrenvoltmeter * NF-Generator * Abschwächer * Oszillograf * Testband (Leerband)	1. Den Meßaufbau zeight Fig. 17. 2. Testband (QZZCRA) in das Cassette 3. Gerät auf "Aufnahme" und Bandwa schalten. 4. Über den Abschwächer 1kHz-Signa Generator dem IN-Eingang zuführen 5. Den Abschwächer so einstellen, da Monitorpegel an LINE OUT 0,7V wir 6. Dieses signal auf Testband aufneh 7. Die Aufnahme wiedergeben, und de OUT am Röhrenvoltmeter ablesen. **NORMALWERT: 0,7V±1,5dB** 8. Falls der gemessene Wert nicht der den VR abgleichen. VR203 (L-CH) VR204 (R-CH) 9. Ab Punkt 3 wiederholen. 10. Den Bandsortenwähler in jede Posi 11. Nacheinander das Fe-Cr Testband (band (QZZCRX) und das Metallparti benutzen. 12. Gerät auf Aufname schalten. 13. Die Aufnahme wiedergeben, und de OUT am Röhrenvoltmeter ablesen. **NORMALWERT: 0,7V±1,5dB**

	Messung und Einstellung
er	**Abgleich (zum Aufnahmeverstärker)** 1. Den Meßaufbau zeigt Fig. 13. 2. Gerät auf Aufnahme schalten. 3. Sperrkreisspulen L205 (Linker Kanal) und L206 (Rechter Kanal) so abgleichen daß der Meßwert minimal wird. (S. Fig. 1). **Abgleich (zum Wiedergabeverstärker)** 1. Den Meßaufbau zeight Fig. 14. 2. Auf Aufnahme schalten und den Monitor-Schalter auf „TAPE" stellen. 3. Die Filterspulen L1 (linker Kanal) und L2 (rechter Kanal) so abgleichen, daß an LINE OUT der kleinste Wert gemessen wird.
,	1. Den Meßaufbau zeigt Fig. 15. 2. Gerät auf Aufnahme schalten und Spannung am Meßpunkt 9 ablesen. 3. Löschstrom nach folgender Formel emitteln: Löschstrom (A) $= \frac{\text{Die Spannung über beide Enden von R403}}{1\ (\Omega)}$ **NORMALWERT: 100^{+20}_{-5}mA (Metal position)** 4. Abweichungen können durch Abgleich von VR403 korrigiert werden.
	1. Den Meßaufbau zeigt Fig. 16. 2. Gerät auf "Aufnahme" und Bandwahlschalter auf "Normal" schalten. 3. Spannung vom Röhrenvoltmeter ablesen und Vormagnetisierungsstrom nach folgender Formel berechnen: Vormagnetisierungsstrom (A) = $\frac{\text{Spannung am Röhrenvoltmeter (V)}}{10\ (\Omega)}$ **NORMALWERT: 0.7±0.3mA (Normal position)** 4. VR402 (Linker Kanal) und VR401 (Rechter Kanal) abgleichen. 5. Den Bandsortenwähler in jede Position stellen. 6. Überprüfen, ob der Meßwert im vorgeschriebenen Bereich liegt. **NORMALWERT: 0.75±0.3mA (Fe-Cr position) 1.0±0.3mA (CrO_2 position) 1.6±0.3mA (metal position)**
be	1. Den Meßaufbau zeight Fig. 17. 2. Testband (QZZCRA) in das Cassettenfach einsetzen. 3. Gerät auf "Aufnahme" und Bandwahlschalter auf "Normal" schalten. 4. Über den Abschwächer 1kHz-Signal (−24dB) vom NF-Generator dem IN-Eingang zuführen. 5. Den Abschwächer so einstellen, daß der Quellen-Monitorpegel an LINE OUT 0,7V wird. 6. Dieses signal auf Testband aufnehmen. 7. Die Aufnahme wiedergeben, und den Ausgangspegel an LINE OUT am Röhrenvoltmeter ablesen. **NORMALWERT: 0,7V±1,5dB (Normal position)** 8. Falls der gemessene Wert nicht der Toleranz liegt, die folgenden VR abgleichen. VR203 (L-CH) VR204 (R-CH) 9. Ab Punkt 3 wiederholen. 10. Den Bandsortenwähler in jede Position stellen. 11. Nacheinander das Fe-Cr Testband (QZZCRY), das CrO_2 Testband (QZZCRX) und das Metallpartikel-Testband (QZZCRZ) benutzen. 12. Gerät auf Aufname schalten. 13. Die Aufnahme wiedergeben, und den Ausgangspegel an LINE OUT am Röhrenvoltmeter ablesen. **NORMALWERT: 0,7V±1,5dB (Fe-Cr position) (CrO_2 position) (Metal position)**

Gegenstand	Messung und Einstellung
	14. Falls der meßwert nicht im vorgeschriebenen Bereich liegt, auf folgende Weise einstellen. 15. Die Gesamtverstärkung durch Kurzschließen bzw. Unterbrechen der in Fig. 18, gezeigten Leiterbahnenstelle so einstellen, daß die Sollwerte angenähert werden. 16. Nehmen Sie zur Einstellung der Gesamtverstärkung die untenstehenden Tabellen zur Hand. Fe-Cr position (LINKER KANAL) Verstär-kung / Punkt (d) / Punkt (e) Gering / Geschlossen / Geschlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen Fe-Cr position (RECHTER KANAL) Verstär-kung / Punkt (d') / Punkt (e') Gering / Geschlossen / Geshlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen CrO_2 position (LINKER KANAL) Verstär-kung / Punkt (f) / Punkt (g) Gering / Geschlossen / Geschlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen CrO_2 position (RECHTER KANAL) Verstär-kung / Punkt (f') / Punkt (g') Gering / Geschlossen / Geshlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen Metal position (LINKER KANAL) Verstär-kung / Punkt (h) / Punkt (i) Gering / Geschlossen / Geschlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen Metal position (RECHTER KANAL) Verstär-kung / Punkt (h') / Punkt (i') Gering / Geschlossen / Geshlossen ↕ / Geschlossen / Offen ↕ / Offen / Geschlossen Hoch / Offen / Offen
K Gesamt-frequenzgang Bedingung: * Aufnahme und Wiedergabe * Eingangsregler...MAX. * Ausgangsregler...MAX. * Bandwahlschalter ...Normal position ...Fe-Cr position ...CrO_2 position ...Metal position Meßgerät: * Röhrenvoltmeter * NF-Generator * Abschwächer * Widerstand (600Ω) * Testband (Leerband) QZZCRA für Normal QZZCRY für Fe-Cr QZZCRX für CrO_2 QZZCRZ für Metal	**Anm. 1:** Vor Messung und Abgleich des Gesamtfrequenzganges ist sicherzustellen, daß der Frequenzgang bei Wiedergabe korrekt ist (Vgl. entspr. Abschnitt). **Anm. 2:** Das ab Juli 1980 erhältliche Testband QZZCRA hat eine höhere Aussteuerbarkeit im mittleren und hohen Frequenzbereich. * Diese Werte gelten für das neue Testband QZZCRA. * Diese Werte gelten für das alte Testband QZZCRA. Das neue Testband QZZCRA ist wie in Fig. 20 gekennzeichnet. **MESSUNG:** 1. Den Meßaufbau zeigt Fig. 17. 2. Testband (QZZCRA) in das Cassettenfach einsetzen. 3. Gerät auf "Aufnahme" und Bandwahlschalter auf "Normal" schalten. 4. 1kHz vom NF-Generator über den Abschwächer dem NF-Eingang zuführen. 5. Den Abschwächer so einstellen, daß der Eingangspegel −20dB des Stand-Aufnahmepegels berträge. 6. Zu diesem Zeitpunkt beträgt der Ausgangspegel 0,07V. 7. Bei dem gleichen Pegel sind die Frequenzen 50Hz, 200Hz, 1kHz, 4kHz, 8kHz und 13kHz (15kHz für CrO_2 band order Fe-Cr band, 16kHz für Metal band) aufzuehme. 8. Diese Aufnahme wiedergeben und dabei die Abweichungen der Pegel der einzeinen Frequenzen vom 1kHz-Pegel in dB bestimmen. 9. Überprüfen, ob der Meßwert innerhalb des Bereichs liegt, der in dem Frequenzgangdiagram angegeben ist (S. Fig. 19). 10. Nacheinander das Fe-Cr Testband (QZZCRY), das CrO_2 Testband (QZZCRX) und das Metal-Testband (QZZCRZ) benutzen. 11. Den Bandsortenwähler in jede Position stellen. 12. Bei der Messung von Schritt 3 bis 8 auf die gleiche weise vorgehen. 13. Überzeugen Sie sich, ob der gemessene Wert in dem angegebenen Bereich liegt. (Siehe Diagramm für die Frequenzgänge von Fe-Cr, CrO_2 und Metal bande, Fig. 21).

Gegenstand	Messung und Einstellung
	Abgleich-1 mit Vormagnetisierungsstrom 1. Werden die mittleren und hohen Frequenzen gemäßder durchgezogene Linie in Fig. 22 zu stark wiedergegeben, so ist der Vormagnetisierungsstrom durch Drehen, die folgenden VR zu erhöhen. VR402 (linker Kanal), VR401 (rechter Kanal) 2. Erfolgt ein Abfall, wie ihn die Strichlinie in Fig. 22 zeigt, so ist an diesen Reglern entgegen der Pfeilrichtung zu drehen, die folgenden VR zu erhöhen. VR402 (linker Kanal), VR401 (rechter Kanal) **Anm.:** Für die Messung des Vormagnetisierungsstromes sei auf den Abschnitt "❶ Vormagnetisierung" hingewiesen. **Abgleich-2 mit der Entzerrerspule zur Aufnahme-Eintzerrung** Verläuft der Frequenzgang bei mitteleren Frequenzen flach und zeigt bei höheren Frequenzen einen schart en Anstieg oder Abfall entsprechend fig. 23 die folgenden Korrecturspulen zu erhöhen. L203 (L-CH), L204 (R-CH)
L Fluorezenzmeter Bedingung: * Aufnahme * Eingangsregler...MAX. * Ausgangsregler...MAX. * Bandwahlschalter ...Normal position Meßogerät: * Röhrenvoltmeter * NF-Generator * Abschwächer	1. Den Meßaufbau zeigt Fig. 17. 2. Wie aus Fig. 24, ersichtlich, hört der astabile, aus den Transistoren Q102 und Q103 bestehende Multivibrator zu schwingen auf, wenn der Base des Q102 mit Masse verbunden wird. 3. Signal vor 1kHz (−24dB) an die Line IN-Buchse eingeben und die Aufnahmetaste drücken. 4. ATT so abstimmen, daß der Ausgangspegel an der LINE OUT-Buchse 0,7V wird. (Der Eingangspegel in dieser Stellung wird als Standardpegel bezeichnet). 5. Justierung auf "−20dB". A. Den Abschwächer so einstellen, daß der Eingangspegel −20dB des Stand-Aufnahmepegels beträge. B. VR101 so abgleichen, daß im Bereich von −20dB±0,8dB das Segment −20dB aufleuchtet (NUR LINKER KANAL) (S. Fig. 25). 6. Justierung auf "0dB". A. ATT so abstimmen, daß der Ausgangspegel an der LINE OUT-Buchse, 0,7V wird. B. VR102 so abgleichen, daß im Bereich von ±0,2dB um den Standardpegel das Segment +1dB aufleuchtet (S. Fig. 26). 7. Die Anleitungsschritte 5 bie 6 zweimal wiederholen. 8. Die ATT einstellen; kontrollieren, ob alle Segmente aufleuchten, wenn der Eingangspegel 10dB höher als der Standardpegel ist (S. Fig. 27).
M Dolby-Schaltung Bedingung: * Aufnahme * Eingangsregler...MAX. * Ausgangsregler...MAX. Meßgerät: * Röhrevoltmeter * NF-Generator * Abschwächer * Oszillograf * Widerstand (600Ω)	1. Den Meßaufbau zeigt Fig. 28. 2. Gerät in Stellung "Aufnahme" betreiben und Dolby-Schalter ausschalten. Dem NF-Eingang ein 5kHz-Signal zuführen, daß an TP5 (Linker Kanal) und TP6 (Rechter Kanal) −34,5dB erhalten werden. 3. Prüfen, ob das Signal bei eingeschaltetem Dolby-Schalter um 8 (±2,5)dB größer ist als bei ausgeschaltetem Dolby-Schalter.

ORDER NO. ARD- 8311036P

Parts Change Notice

(D)...For all European areas except United Kingdom.
(B)...For United Kingdom.
(N)...For Asia, Latin America, Middle East and Africa areas.

Model No.

RS-M260

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change *The circled item indicates the reason. If no marking, see the Notes in the bottom column.

1. Improve performance
2. Change of material or dimension
3. To meet approved specification
4. Standardization
5. Addition
6. Deletion
7. Correction
8. Other

Interchangeability Code **The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.

	Parts	Set Production	
A	Original → Early New → Late		Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original → Early New → Late		Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
C	Original → Early New → Late		New parts only may be used in early or late production sets. Stock new parts.
D	Original → Early New → Late		Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Model No.	Ref. No.	Original Part No.	New Part No.	Notes (*~**)	Part Name & Descriptions
RS-M260	G3(N)	QGCM0037 (Black)	QGCM0036 (Silver)	3-D	Bottom Cover
"	G5(D)	QYT0586K (Black)	QTY0586 (Silver)	"	Volume Knob-A Assembly
"	G6(D)	QTY0587K (Black)	QTY0587 (Silver)	"	Volume Knob-B Assembly
"	G7(D)	QG01692K (Black)	QG01692 (Silver)	"	Push Button (Power ON/OFF)
"	G8(D)	QG01694K (Black)	QG01694 (Silver)	"	Push Button (Monitor/Dolby NR/ Input Select)
"	G9(D)	QGT1515K (Black)	QGT1515 (Silver)	"	Counter Knob (Tape Select/ Output Level)
"	G40(N)	XWC3B	———	6-D	Washer(3ϕ)
"	P4(D/B)	XZB40X60A02	XZB50X65A02	3-D	Poly Bag

File this Parts Change Notice with your copy of the Service Manual.
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